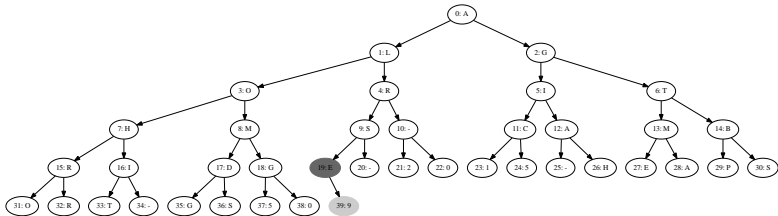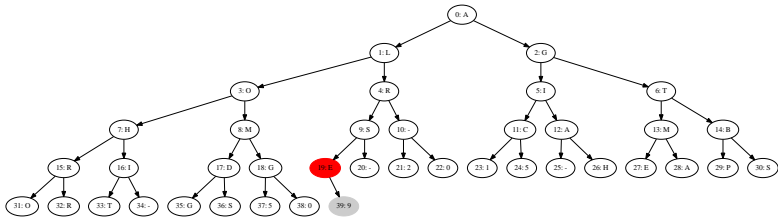Initially the array may not satisfy the heap property.
The heap will be built up by calling heapify on all internal nodes from the bottom up.
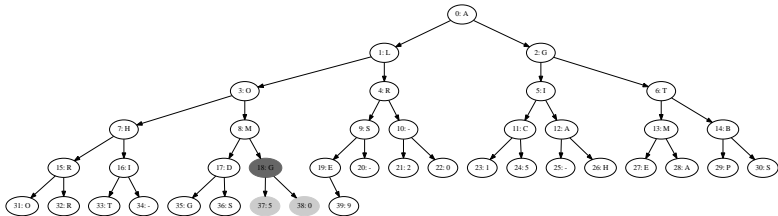Heap size: 40 Array contents: ALGORITHMS-CAMBRIDGE-2015-HEAPSORT-GS509

Running heapify on node 19 as part of the build heap (heap-up) process.
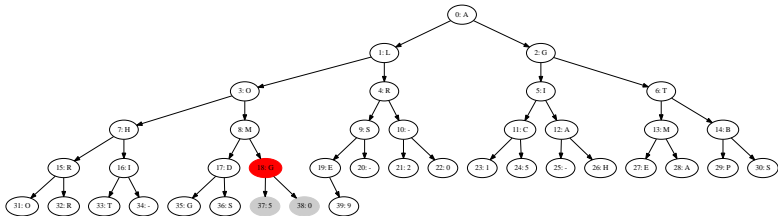Heap size: 40 Array contents: ALGORITHMS-CAMBRIDGE-2015-HEAPSORT-GS509

Largest of node 19 and its children is node 19.
No swap is necessary, heapify done.
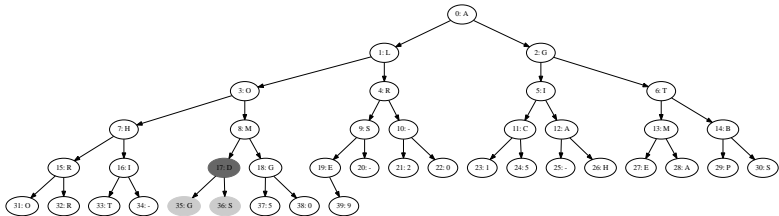Heap size: 40 Array contents: ALGORITHMS-CAMBRIDGE-2015-HEAPSORT-GS509

Running heapify on node 18 as part of the build heap (heap-up) process.
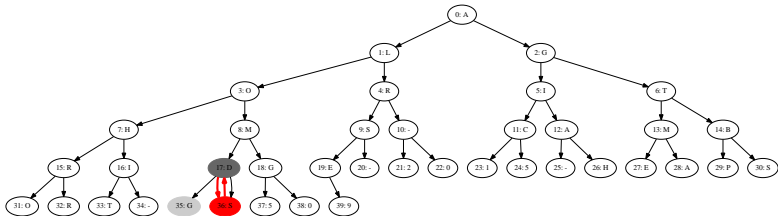Heap size: 40 Array contents: ALGORITHMS-CAMBRIDGE-2015-HEAPSORT-GS509

Largest of node 18 and its children is node 18.
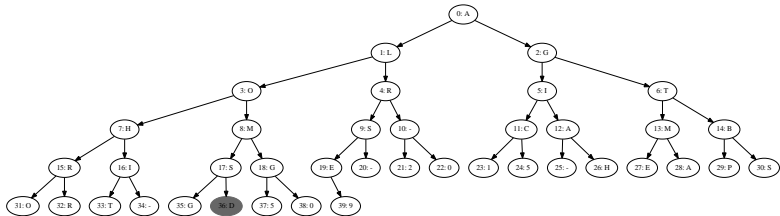No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITHMS-CAMBRIDGE-2015-HEAPSORT-GS509

Running heapify on node 17 as part of the build heap (heap-up) process.
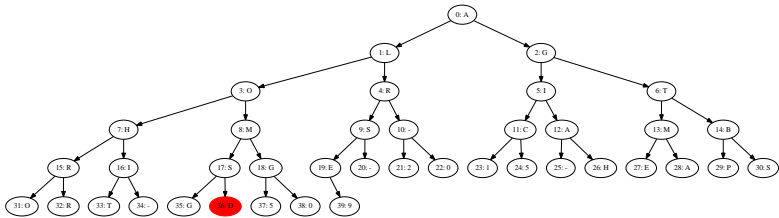Heap size: 40 Array contents: ALGORITHMS-CAMBRIDGE-2015-HEAPSORT-GS509

Largest of node 17 and its children is node 36.
Root and max will be swapped and heapify will recurse on the new node 36.
Heap size: 40 Array contents: ALGORITHMS-CAMBRIDGE-2015-HEAPSORT-GS509

Running heapify on node 36.
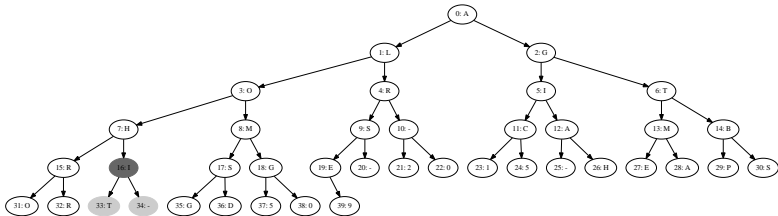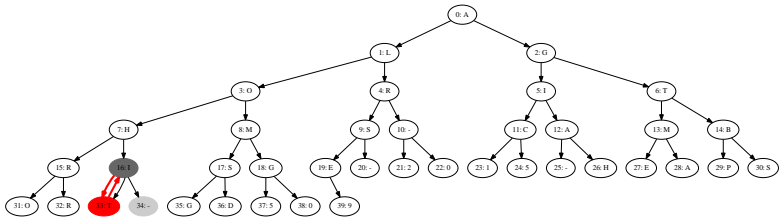Heap size: 40 Array contents: ALGORITHMS-CAMBRISGE-2015-HEAPSORT-GD509

Largest of node 36 and its children is node 36.
No swap is necessary, heapify done.
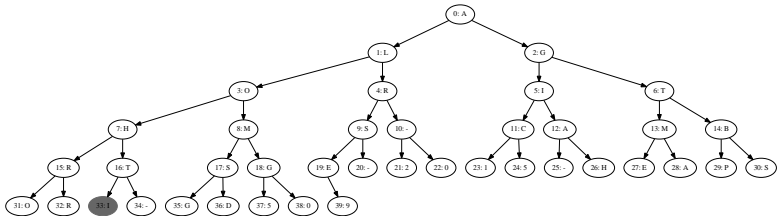Heap size: 40 Array contents: ALGORITHMS-CAMBRISGE-2015-HEAPSORT-GD509

Running heapify on node 16 as part of the build heap (heap-up) process.
Heap size: 40 Array contents: ALGORITHMS-CAMBRISGE-2015-HEAPSORT-GD509
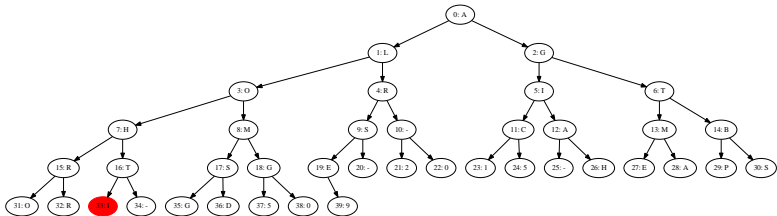
Largest of node 16 and its children is node 33.
Root and max will be swapped and heapify will recurse on the new node 33.
Heap size: 40 Array contents: ALGORITHMS-CAMBRISGE-2015-HEAPSORT-GDS09
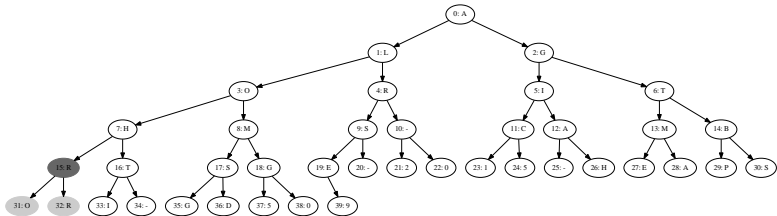
Running heapify on node 33.
Heap size: 40 Array contents: ALGORITHMS-CAMBRTSGE-2015-HEAPSORI-GD509

Largest of node 33 and its children is node 33.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITHMS-CAMBRTSGE-2015-HEAPSORI-GD509

Running heapify on node 15 as part of the build heap (heap-up) process.
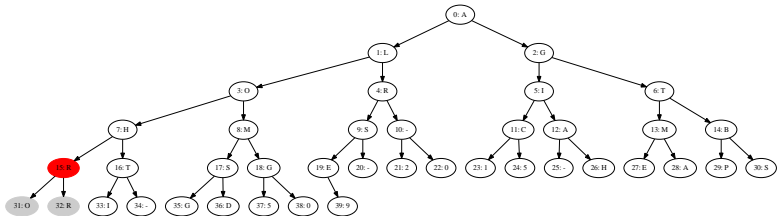Heap size: 40 Array contents: ALGORITHMS-CAMBRTSGE-2015-HEAPSORI-GD509

Largest of node 15 and its children is node 15.
No swap is necessary, heapify done.
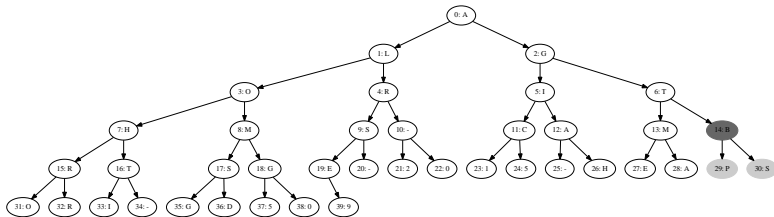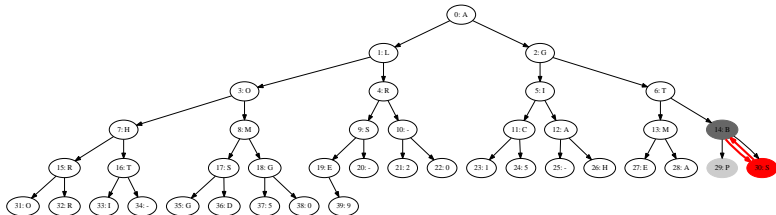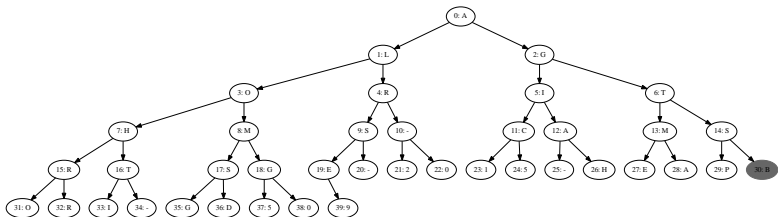Heap size: 40 Array contents: ALGORITHMS-CAMBRTSGE-2015-HEAPSORI-GDSO9

Running heapify on node 14 as part of the build heap (heap-up) process.
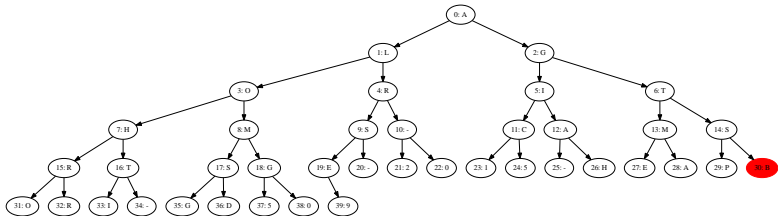Heap size: 40 Array contents: ALGORITHMS-CAMBRTSGE-2015-HEAPSORI-GD509

Largest of node 14 and its children is node 30.
Root and max will be swapped and heapify will recurse on the new node 30.
Heap size: 40 Array contents: ALGORITHMS-CAMBRTSGE-2015-HEAPSORI-GDS09

Running heapify on node 30.
Heap size: 40 Array contents: ALGORITHMS-CAMSRTSGIE-2015-HEAPBORI-GDS09

Largest of node 30 and its children is node 30.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITHMS-CAMSRTSGE-2015-HEAPBORI-GD509

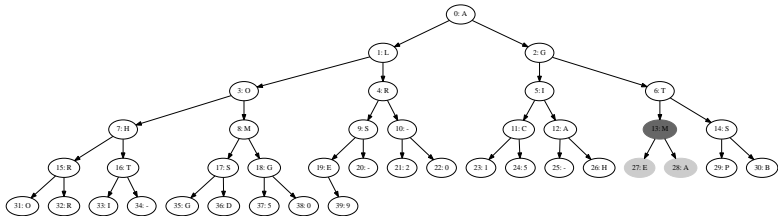Running heapify on node 13 as part of the build heap (heap-up) process.
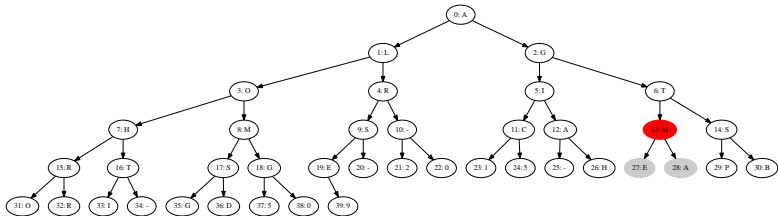Heap size: 40 Array contents: ALGORITHMS-CAMSRTSGE-2015-HEAPBORI-GD509

Largest of node 13 and its children is node 13.
No swap is necessary, heapify done.
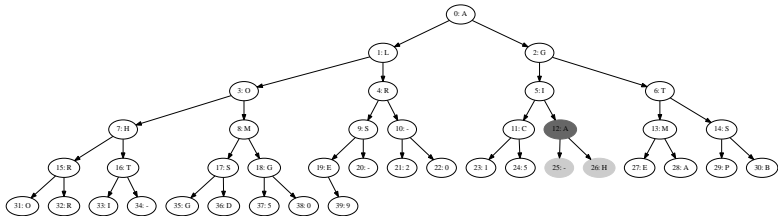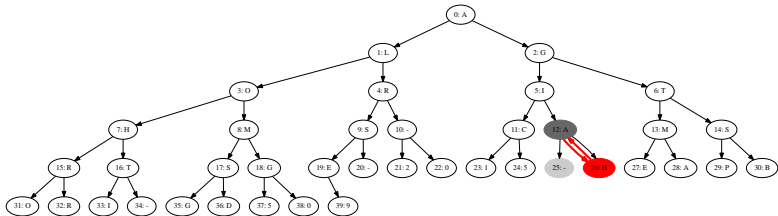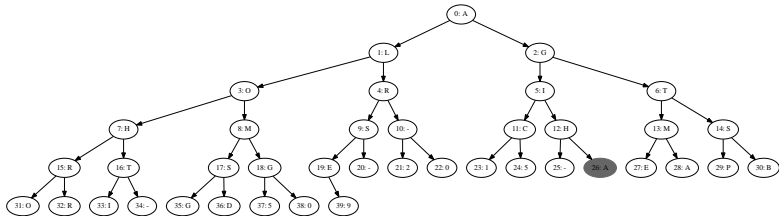Heap size: 40 Array contents: ALGORITHMS-CAMSRTSGE-2015-HEAPBORI-GD509

Running heapify on node 12 as part of the build heap (heap-up) process.
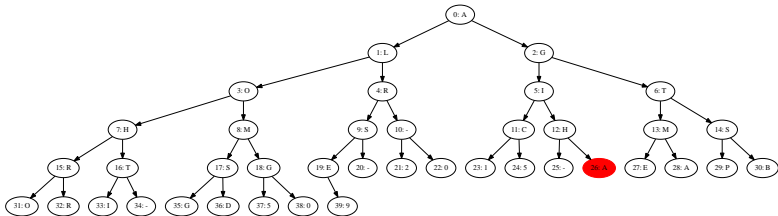Heap size: 40 Array contents: ALGORITHMS-CAMSRTSGE-2015-HEAPBORI-GD509

Largest of node 12 and its children is node 26.
Root and max will be swapped and heapify will recurse on the new node 26.
Heap size: 40 Array contents: ALGORITHMS-CAMSRTSGE-2015-HEAPBORI-GDS09

Running heapify on node 26.
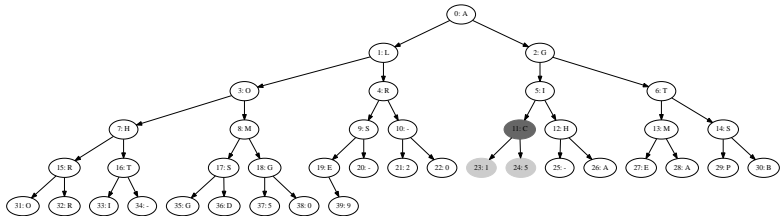Heap size: 40 Array contents: ALGORITHMS-CHMSRTSGIE-2015-AEAPBORI-GD509
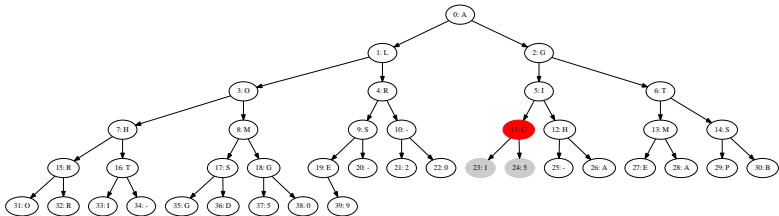
Largest of node 26 and its children is node 26.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITHMS-CHMSRTSGE-2015-AEAPBORI-GD509

Running heapify on node 11 as part of the build heap (heap-up) process.
Heap size: 40 Array contents: ALGORITHMS-CHMSRTSGE-2015-AEAPBORI-GD509

Largest of node 11 and its children is node 11.
No swap is necessary, heapify done.
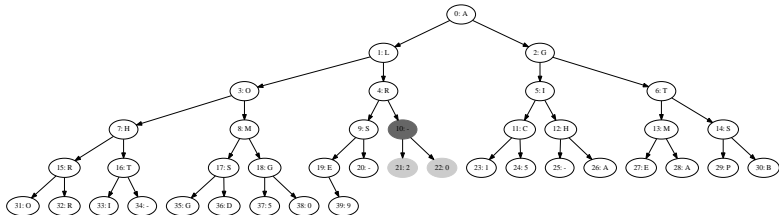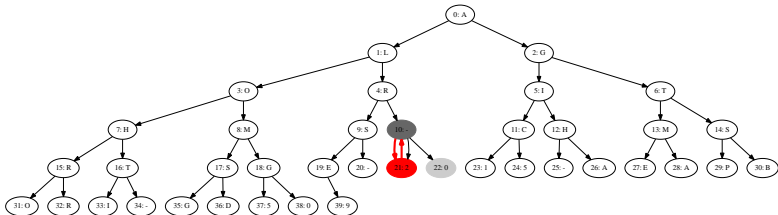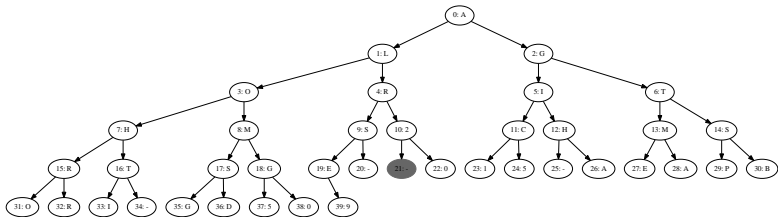Heap size: 40 Array contents: ALGORITHMS-CHMSRTSGE-2015-AEAPBORI-GD509

Running heapify on node 10 as part of the build heap (heap-up) process.
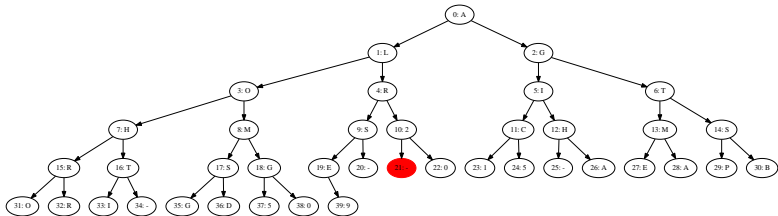Heap size: 40 Array contents: ALGORITHMS-CHMSRTSGE-2015-AEAPBORI-GDS09

Largest of node 10 and its childrens is node 21.
Root and max will be swapped and heapily will recurse on the new node 21.
Heap size: 40 Array contents: ALGORITHMS-CHMSRTSGE-2015-AEAPBORI-GDS09
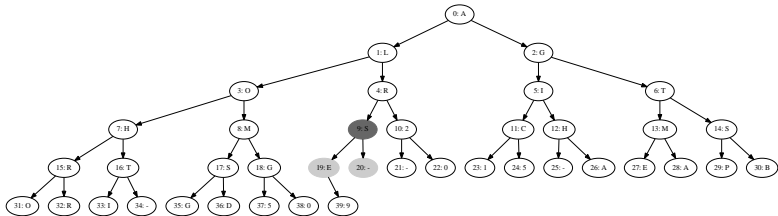
Running heapify on node 21.
Heap size: 40 Array contents: ALGORITHMS2CHMSRTSGE--015-AEAPBORI-GD509
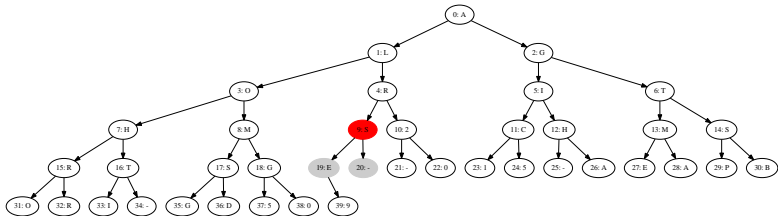
Largest of node 21 and its children is node 21.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITHMS2CHMSRTSGE--015-AEAPBORI-GD509

Running heapify on node 9 as part of the build heap (heap-up) process.
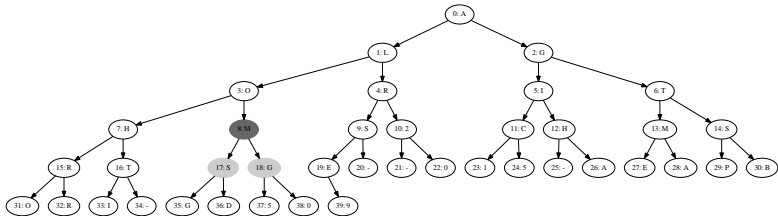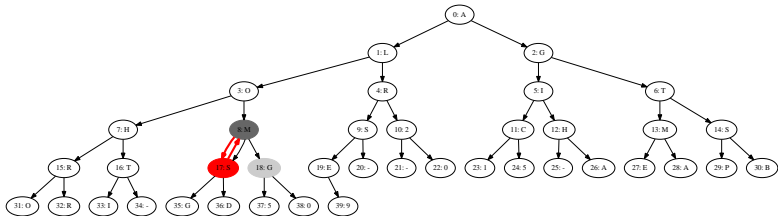Heap size: 40 Array contents: ALGORITHMS2CHMSRTSGE--015-AEAPBORI-GD509

Largest of node 9 and its children is node 9.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITHMS2CHMSRTSGE--015-AEAPBORI-GDS09

Running heapify on node 8 as part of the build heap (heap-up) process.
Heap size: 40 Array contents: ALGORITHMS2CHMSRTSGE--015-AEAPBORI-GDS09

Largest of node 8 and its children is node 17.
Root and max will be swapped and heapify will recurse on the new node 17.
Heap size: 40 Array contents: ALGORITHMS2CHMSRTSGE--015-AEAPBORI-GDS09

Running heapify on node 17.
Heap size: 40 Array contents: ALGORITHSS2CHMSRTMGE--015-AEAPBORI-GD509

Largest of node 17 and its children is node 17.
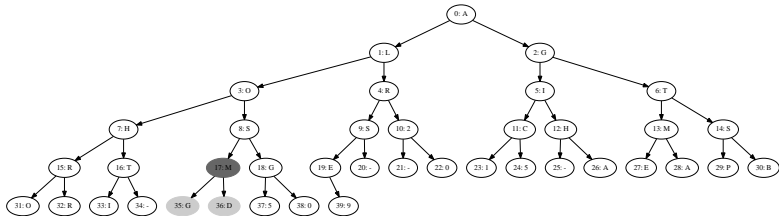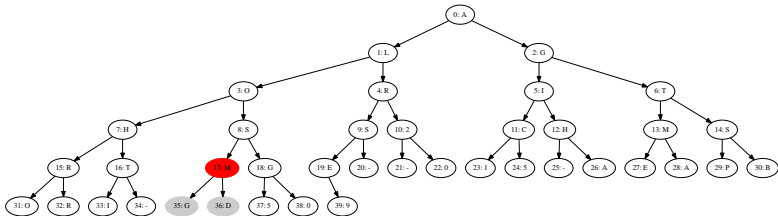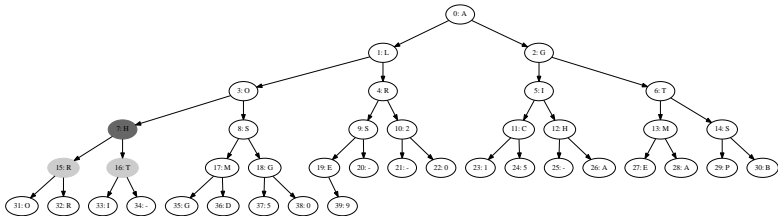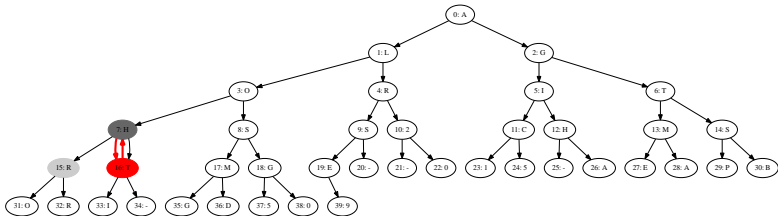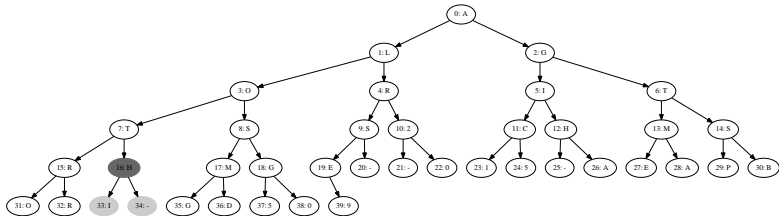No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITHSS2CHMSRTMGE--015-AEAPBORI-GD509

Running heapify on node 7 as part of the build heap (heap-up) process.
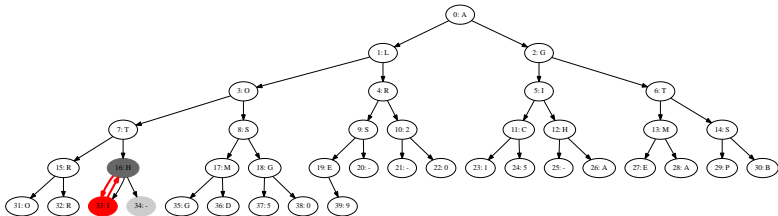Heap size: 40 Array contents: ALGORITHSS2CHMSRTMGE--015-AEAPBORI-GDS09

Largest of node 7 and its children is node 16.
Root and max will be swapped and heapify will recurse on the new node 16.
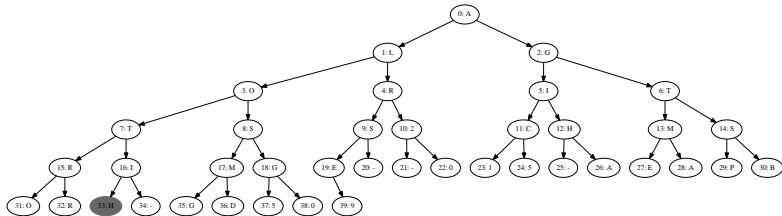Heap size: 40 Array contents: ALGORITHSS2CHMSRTMGE--015-AEAPBORI-GDS09

Running heapify on node 16.
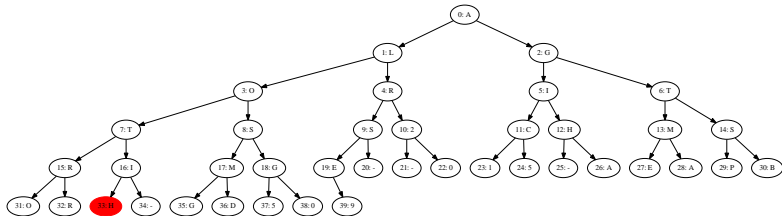Heap size: 40 Array contents: ALGORITTSS2CHMSRHMGE--015-AEAPBORI-GD509

Largest of node 16 and its children is node 33.
Root and max will be swapped and heapify will recurse on the new node 33.
Heap size: 40 Array contents: ALGORITTSS2CHMSRHMGE--015-AEAPBORI-GDS09

Running heapify on node 33.
Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGE--015-AEAPBORH-GD509

Largest of node 33 and its children is node 33.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGE--015-AEAPBORH-GD509

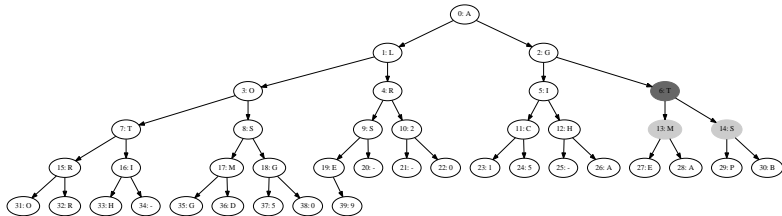Running heapify on node 6 as part of the build heap (heap-up) process.
Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGE--015-AEAPBORH-GDS09
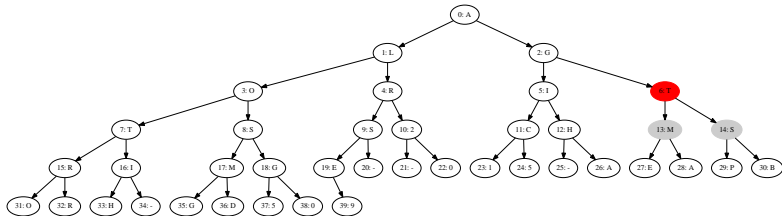
Largest of node 6 and its children is node 6.
No swap is necessary, heapify done.
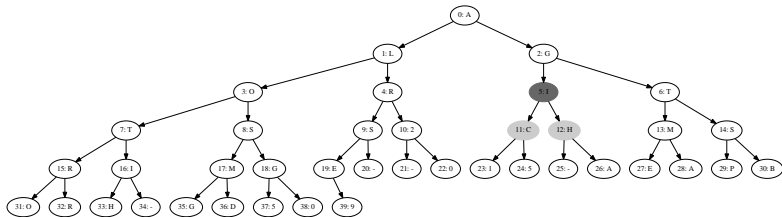Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGE--015-AEAPBORH-GD509

Running heapify on node 5 as part of the build heap (heap-up) process.
Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGE−015-AEAPBORH-GDS09

Largest of node 5 and its children is node 5.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGIE--015-AEAPBORH-GD509

Running heapify on node 4 as part of the build heap (heap-up) process.
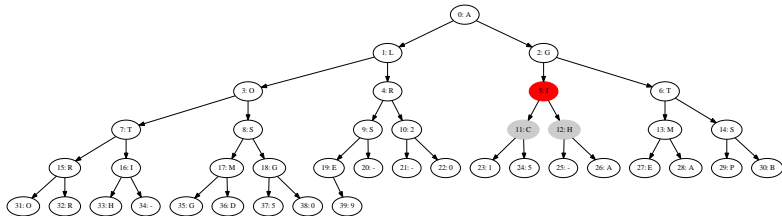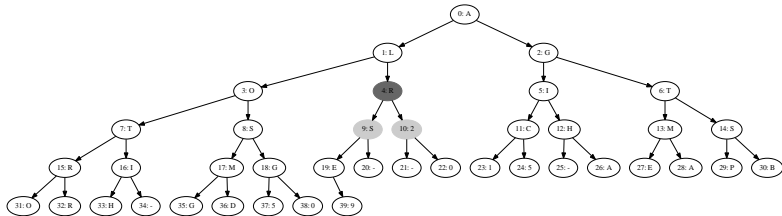Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGE--015-AEAPBORH-GDS09
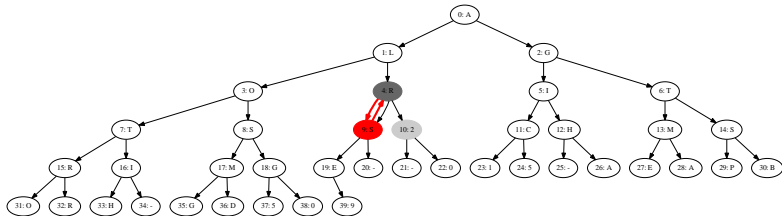
Largest of node 4 and its children is node 9.
Root and max will be swapped and heapify will recurse on the new node 9.
Heap size: 40 Array contents: ALGORITTSS2CHMSRIMGIE--015-AEAPBORH-GDS09

Running heapify on node 9.
Heap size: 40 Array contents: ALGOSITTSR2CHMSRIMGE--015-AEAPBORH-GD509

Largest of node 9 and its children is node 9.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGOSITTSR2CHMSRIMGIE--015-AEAPBORH-GD5O9
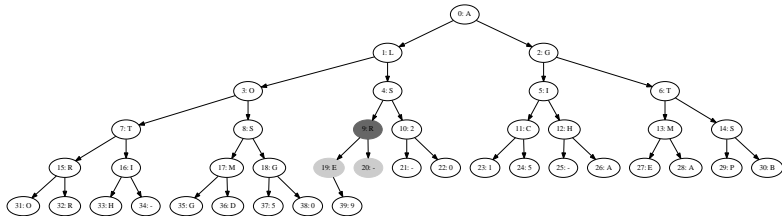
Running heapify on node 3 as part of the build heap (heap-up) process.
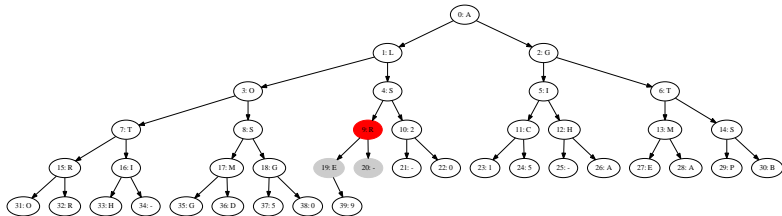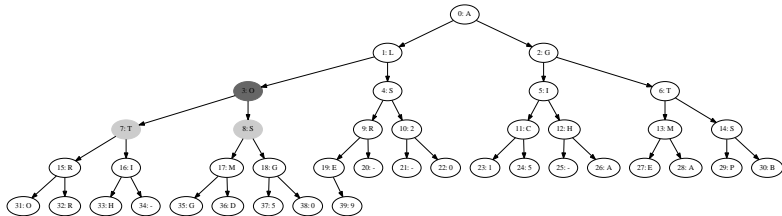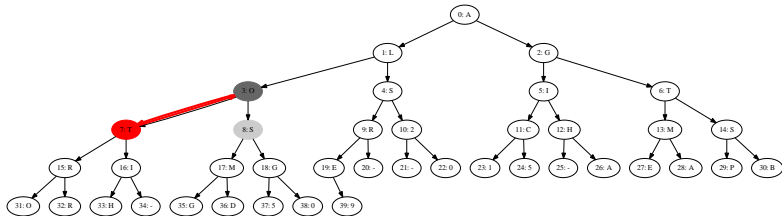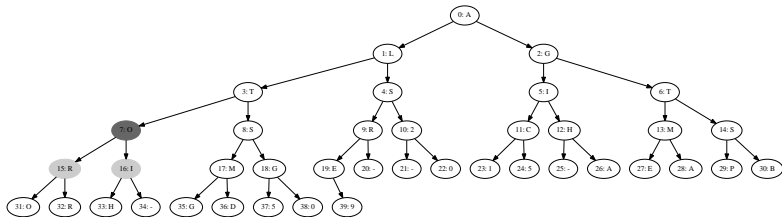Heap size: 40 Array contents: ALGOSITTSR2CHMSRIMGE--015-AEAPBORH-GDS09

Largest of node 3 and its children is node 7.
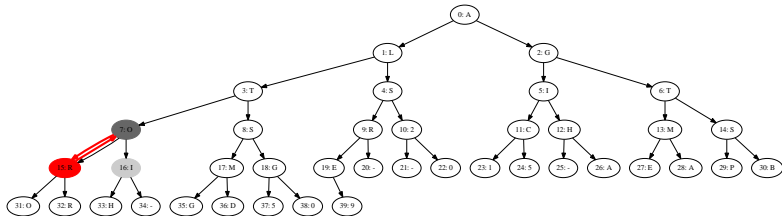Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 40 Array contents: ALGOSITTSR2CHMSRIMGIE--015-AEAPBORH-GDS09

Running heapify on node 7.
Heap size: 40 Array contents: ALGTSITOSR2CHMSRIMGIE--015-AEAPBORH-GDS09

Largest of node 7 and its children is node 15.
Root and max will be swapped and heapify will recurse on the new node 15.
Heap size: 40 Array contents: ALGTSITOSR2CHMSRIMGIE--015-AEAPBORH-GDS09

Running heapify on node 15.
Heap size: 40 Array contents: ALGTSITRSR2CHMSOIMGE--015-AEAPBORH-GD509

Largest of node 15 and its children is node 32.
Root and max will be swapped and heapify will recurse on the new node 32.
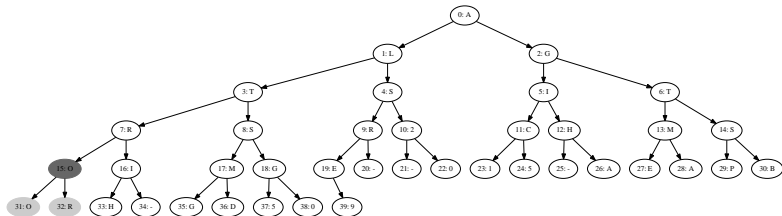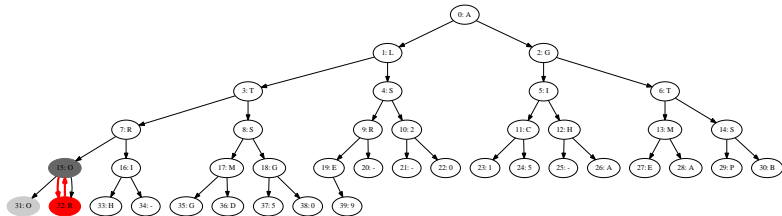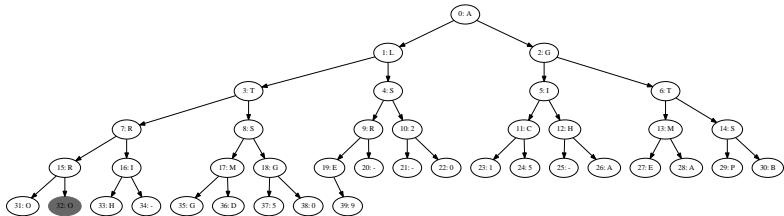Heap size: 40 Array contents: ALGTSITRSR2CHMSOIMGE--O15-AEAPBORH-GDS09

Running heapify on node 32.
Heap size: 40 Array contents: ALGTSITRSR2CHMSRIMGE--015-AEAPBOOH-GD509

Largest of node 32 and its children is node 32.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALGTSITRSR2CHMSRIMGE--015-AEAPBOOH-GD509

Running heapify on node 2 as part of the build heap (heap-up) process.
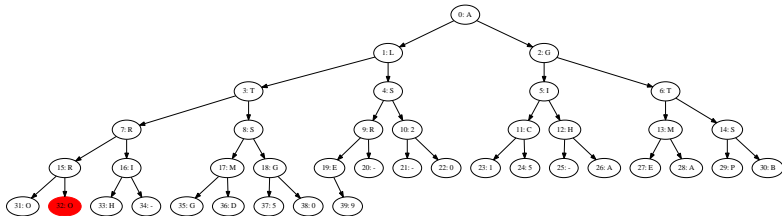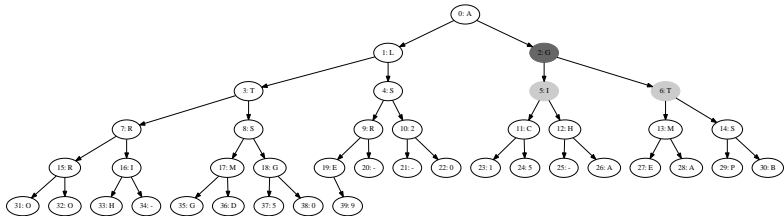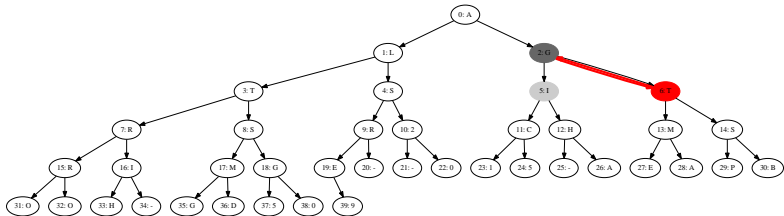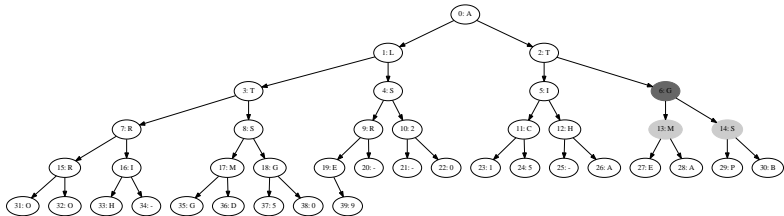Heap size: 40 Array contents: ALGTSITRSR2CHMSRIMGE--015-AEAPBOOH-GDS09

Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 40 Array contents: ALGTSITRSR2CHMSRIMGE--015-AEAPBOOH-GDS09

Running heapify on node 6.
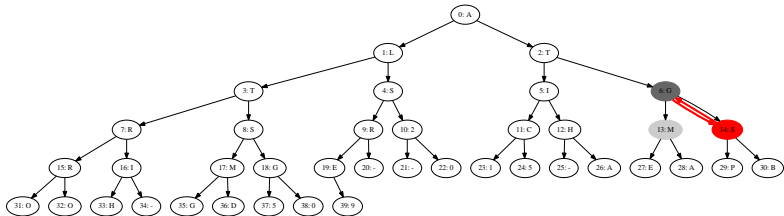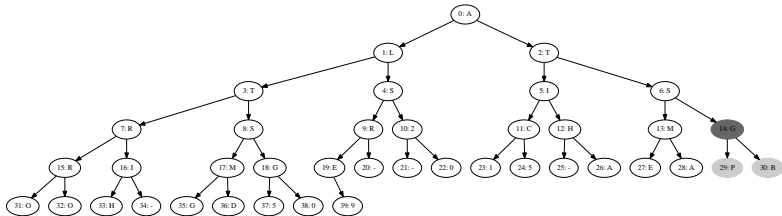Heap size: 40 Array contents: ALTTSIGRSR2CHMSRIMGE--015-AEAPBOOH-GD509

Largest of node 6 and its children is node 14.
Root and max will be swapped and heapify will recurse on the new node 14.
Heap size: 40 Array contents: ALTTSIGRSR2CHMSRIMGE--015-AEAPBOOH-GDS09

Running heapify on node 14.
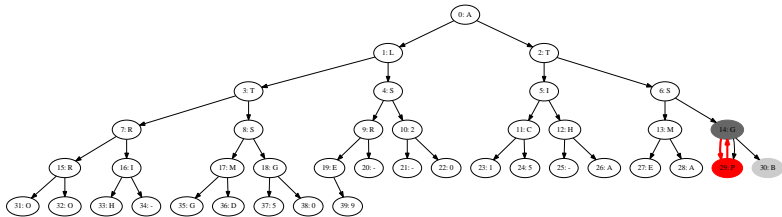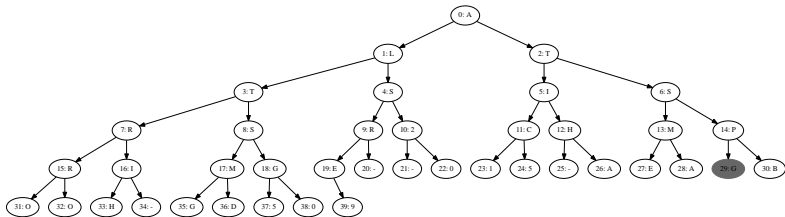Heap size: 40 Array contents: ALTTSLSRSR2CHMGRIMGE--015-AEAPBOOH-GD509

Largest of node 14 and its children is node 29.
Root and max will be swapped and heapify will recurse on the new node 29.
Heap size: 40 Array contents: ALTTSISRSR2CHMGRIMGE--015-AEAPBOOH-GD509

Running heapify on node 29.
Heap size: 40 Array contents: ALTTSISRSR2CHMPRIMGE--015-AEAGBOOH-GD509

Largest of node 29 and its children is node 29.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ALTTSISRSR2CHMPRIMGE--O15-AEAGBOOH-GDS09

Running heapify on node 1 as part of the build heap (heap-up) process.
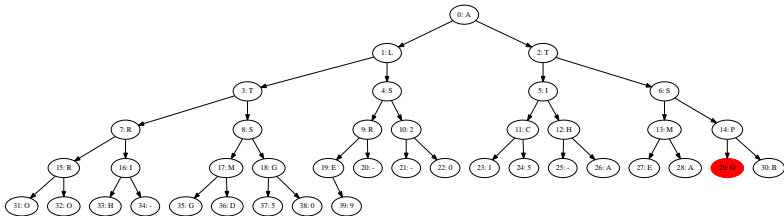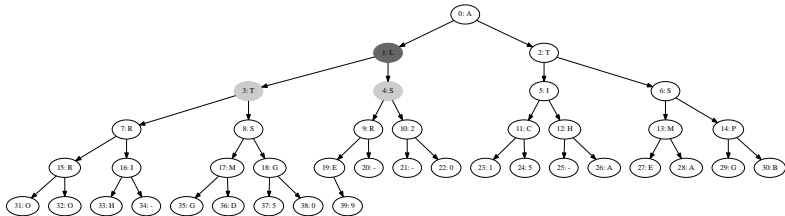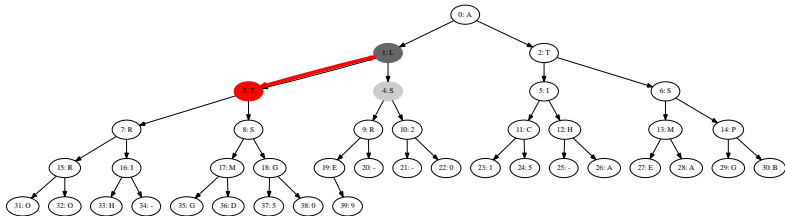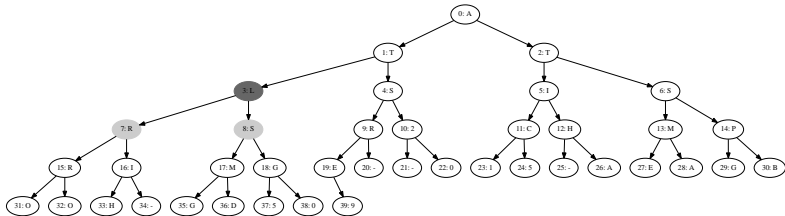Heap size: 40 Array contents: ALTTSISRSR2CHMPRIMGE--015-AEAGBOOH-GD509

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 40 Array contents: ALTTSISRSR2CHMPRIMGIE--015-AEAGBOOH-GDSO9

Running heapify on node 3.
Heap size: 40 Array contents: ATTLSISRSR2CHMPRIMGE--015-AEAGBOOH-GD509

Largest of node 3 and its children is node 8.
Root and max will be swapped and heapify will recurse on the new node 8.
Heap size: 40 Array contents: ATTLSISRSR2CHMPRIMGE--015-AEAGBOOH-GDS09

Running heapify on node 8.
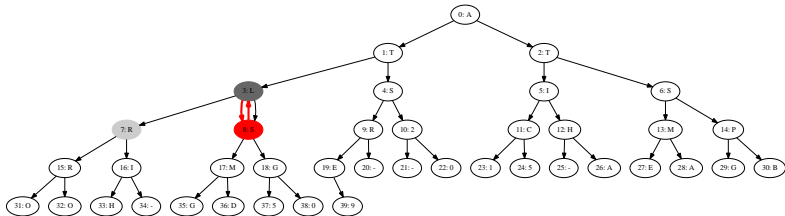Heap size: 40 Array contents: ATTSSISRLR2CHMPRIMGE--015-AEAGBOOH-GD509

Largest of node 8 and its children is node 17.
Root and max will be swapped and heapify will recurse on the new node 17.
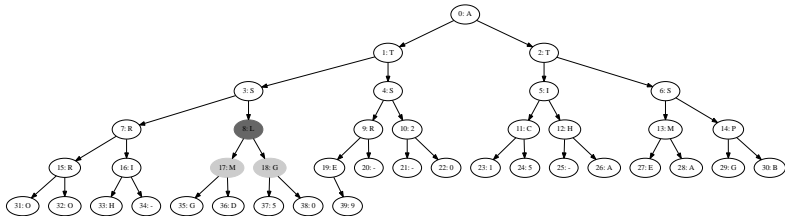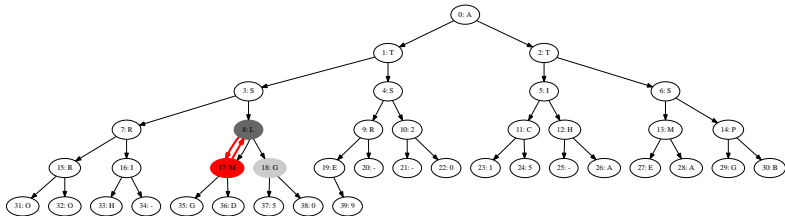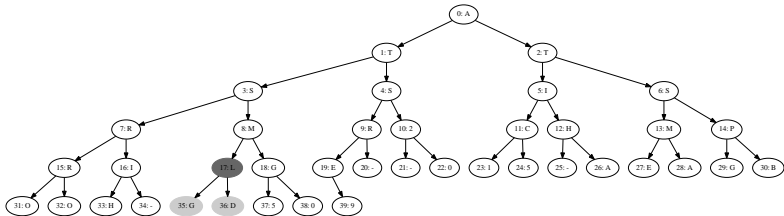Heap size: 40 Array contents: ATTSSISRLR2CHMPRIMGE--015-AEAGBOOH-GD509

Running heapify on node 17.
Heap size: 40 Array contents: ATTSSISRMR2CHMPRILGE--015-AEAGBOOH-GDS09

Largest of node 17 and its children is node 17.
No swap is necessary, heapify done.
Heap size: 40 Array contents: ATTSSISRMR2CHMPRILGE--015-AEAGBOOH-GD509

Running heapify on node 0 as part of the build heap (heap-up) process.
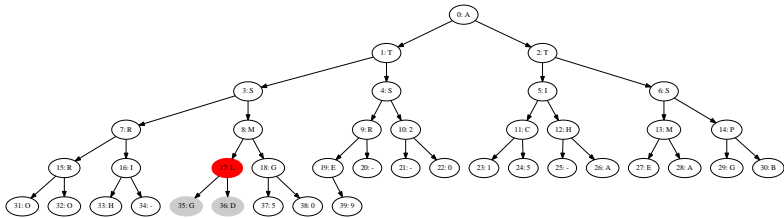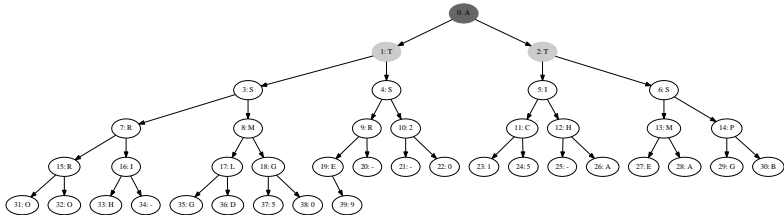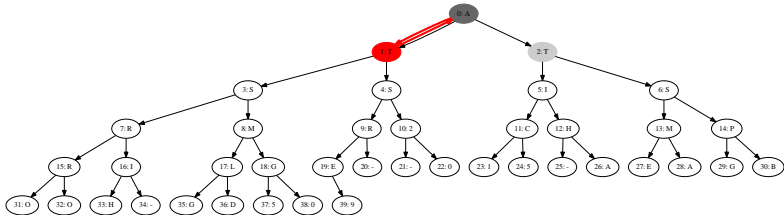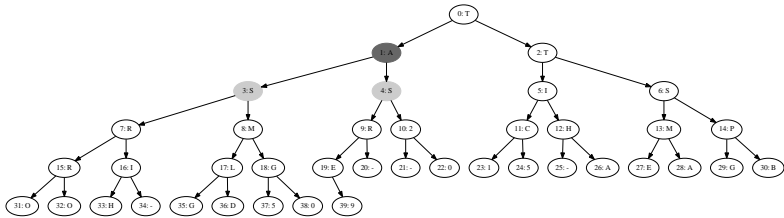Heap size: 40 Array contents: ATTSSISRMR2CHMPRILGE--015-AEAGBOOH-GDS09

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 40 Array contents: ATTSSISRMR2CHMPRILGE--015-AEAGBOOH-GDS09

Running heapify on node 1.
Heap size: 40 Array contents: TATSSISRMR2CHMPRILGE--015-AEAGBOOH-GD509

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 40 Array contents: TATSSISRMR2CHMPRILGE--015-AEAGBOOH-GDSO9

Running heapify on node 3.
Heap size: 40 Array contents: TSTASISRMR2CHMPRILGE--015-AEAGBOOH-GDS09

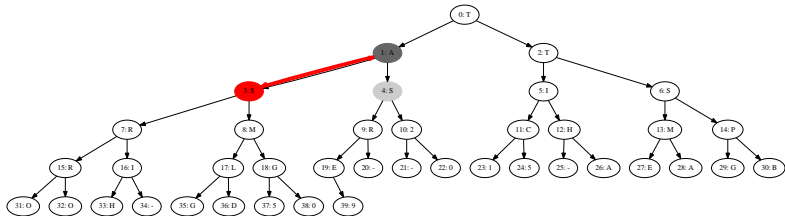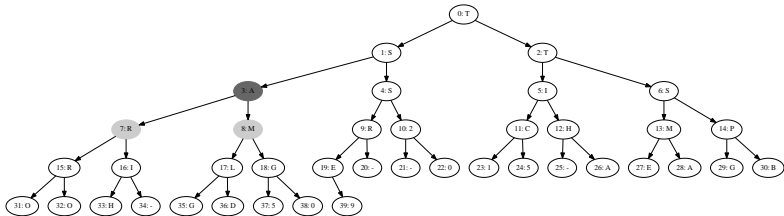Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 40 Array contents: TSTASISRMR2CHMPRILGE--015-AEAGBOOH-GDS09

Running heapify on node 7.
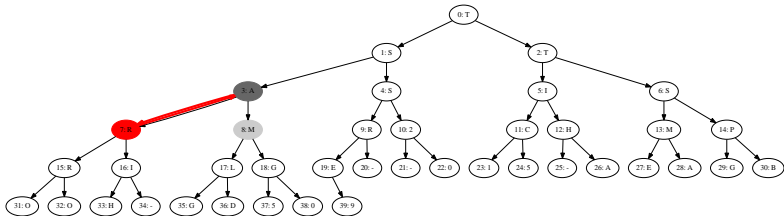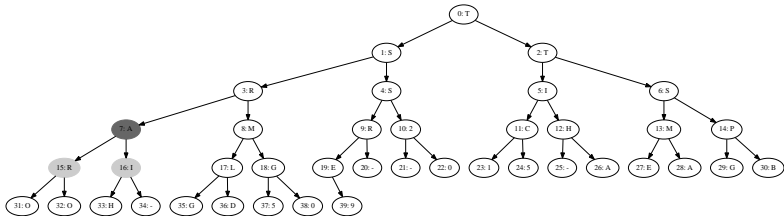Heap size: 40 Array contents: TSTRSISAMR2CHMPRILGE--015-AEAGBOOH-GD509

Largest of node 7 and its children is node 15.
Root and max will be swapped and heapify will recurse on the new node 15.
Heap size: 40 Array contents: TSTRSISAMR2CHMPRILGE--015-AEAGBOOH-GDS09

Running heapify on node 15.
Heap size: 40 Array contents: TSTRSISRMR2CHMPAILGE--015-AEAGBOOH-GDS09

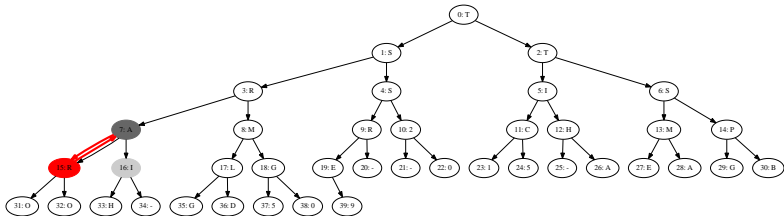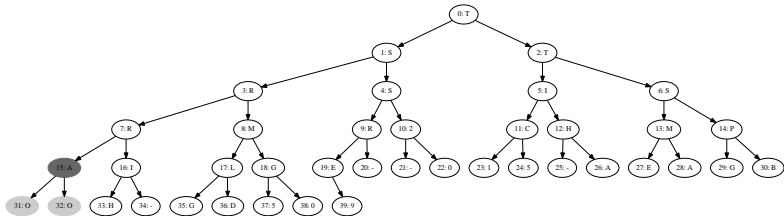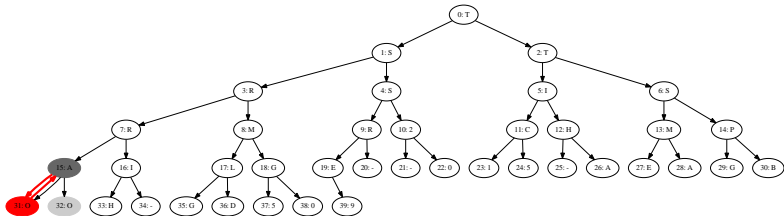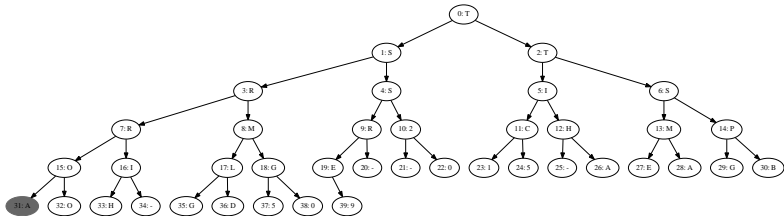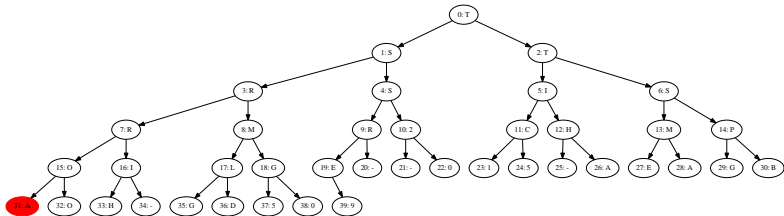Largest of node 15 and its childrens is node 31.
Root and max will be swapped and heapify will recurse on the new node 31.
Heap size: 40 Array contents: TSTRSISRMR2CHMPAILGE--015-AEAGBOOH-GDS09

Running heapify on node 31.
Heap size: 40 Array contents: TSTRSISRMR2CHMPOILGE--015-AEAGBAOH-GDS09

0: T

1: S 2: T

3: R 4: S 5: I 6: S

7: R 8: M 9: R 10: 2 11: C 12: H 13: M 14: P

15: O 16: I 17: L 18: G 19: E 20: - 21: - 22: 0 23: 1 24: S 25: - 26: A 27: E 28: A 29: G 30: B

31: A 32: O 33: H 34: - 35: G 36: D 37: 5 38: 0 39: 9

Largest of node 31 and its children is node 31.
No swap is necessary, heapify done.
Heap size: 40 Array contents: TSTRSISRMR2CHMP0ILGE--015-AEAGBAOH-GD509

The array now satisfies the heap property.
The heap will be emptied by repeatedly taking the root element
and moving it outside of the heap in the underlying array.
Heap size: 40 Array contents: TSTRSISRMR2CHMP0ILGE--015-AEAGBAOH-GD5O9

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 40 Array contents: TSTRSISRMR2CHMPOILGE--015-AEAGBAOH-GD509
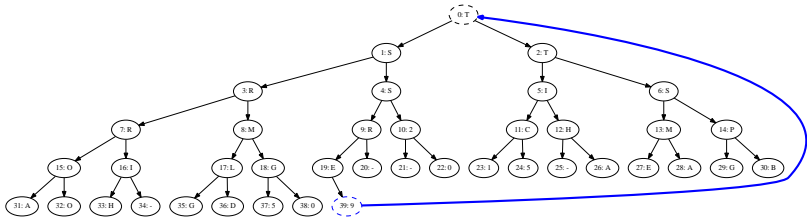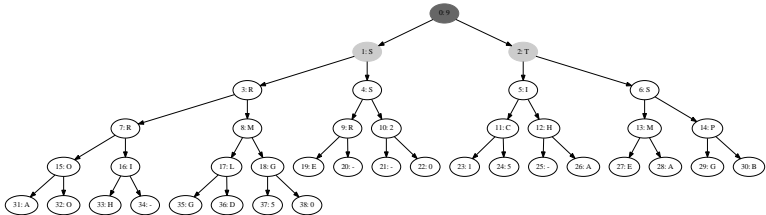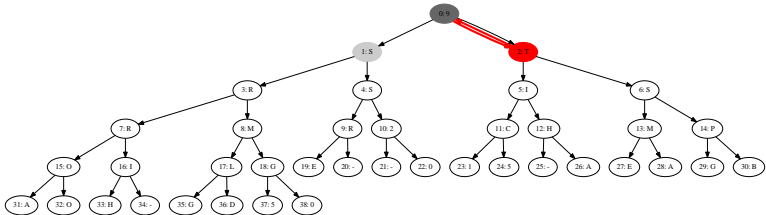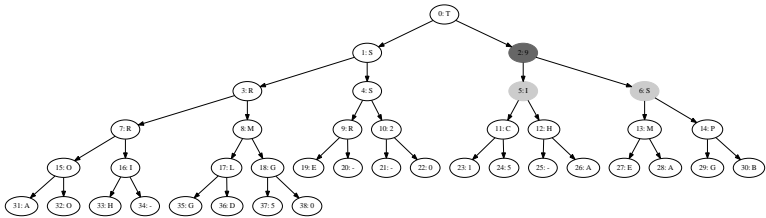
Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 39 Array contents: 9STRSISRMR2CHMPOILGE--015-AEAGBAOH-GD50T

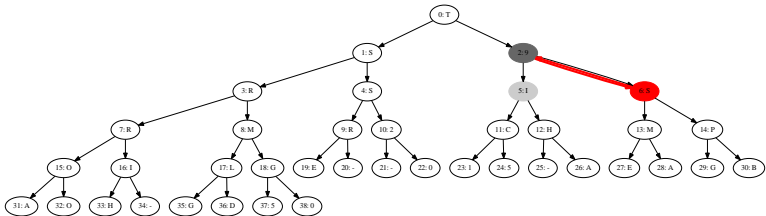Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 39 Array contents: 9STRSISRMR2CHMPOILGE--015-AEAGBAOH-GD50T

Running heapify on node 2.
Heap size: 39 Array contents: TS9RSISRMR2CHMPOILGE--015-AEAGBAOH-GD50T

Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 39 Array contents: TS9RSISRMR2CHMPOILGE--015-AEAGBAOH-GD50T
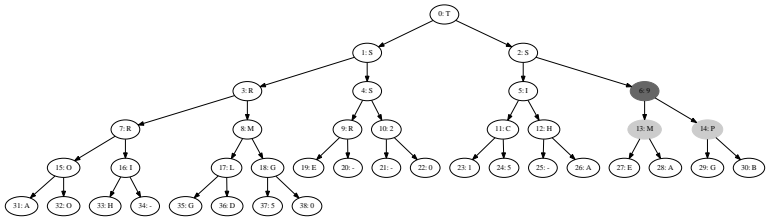
Running heapify on node 6.
Heap size: 39 Array contents: TSSRSI9RMR2CHMPOILGE--015-AEAGBAOH-GD50T

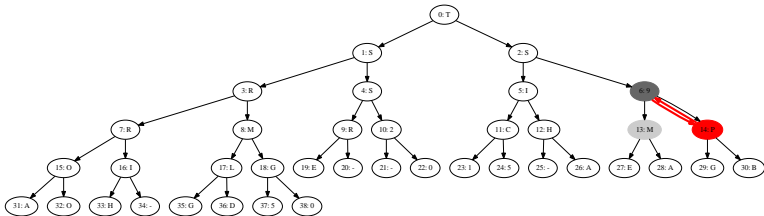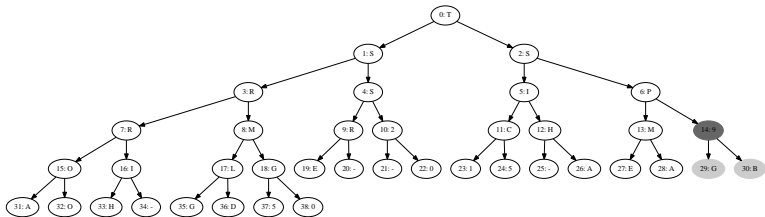Largest of node 6 and its children is node 14.
Root and max will be swapped and heapify will recurse on the new node 14.
Heap size: 39 Array contents: TSSRSPtRMR2CHMPOILGE--015-AEAGBAOH-GD50T

Running heapify on node 14.
Heap size: 39 Array contents: TSSRSIPRMR2CHM9OILGE--015-AEAGBAOH-GD50T

Largest of node 14 and its children is node 29.
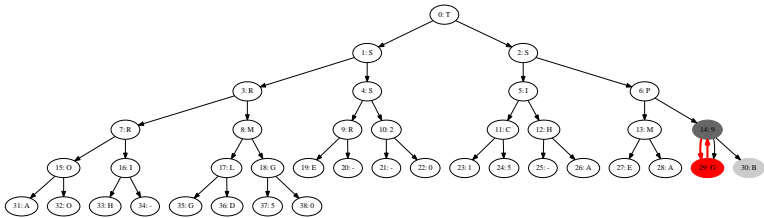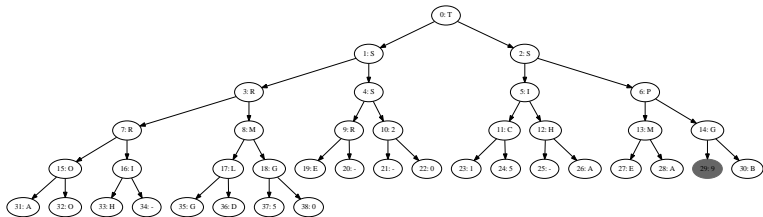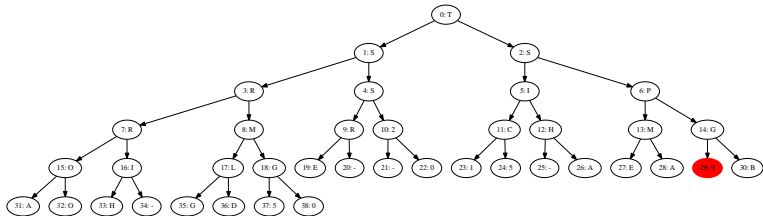Root and max will be swapped and heapify will recurse on the new node 29.
Heap size: 39 Array contents: TSSRSIPRMR2CHM9OILGE--015-AEAGBAOH-GD50T
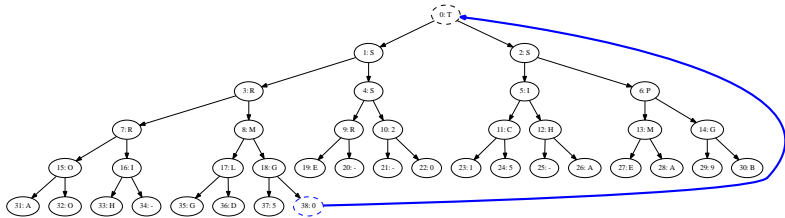
Running heapify on node 29.
Heap size: 39 Array contents: TSSRSIPRMR2CHMGOILGE--015-AEA9BAOH-GD50T
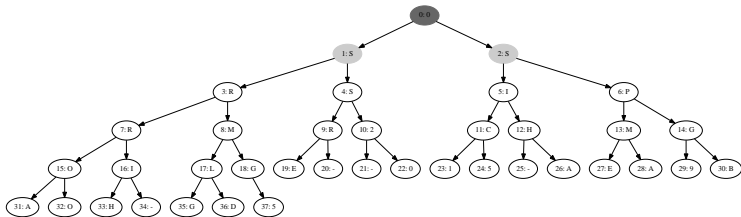
Largest of node 29 and its children is node 29.
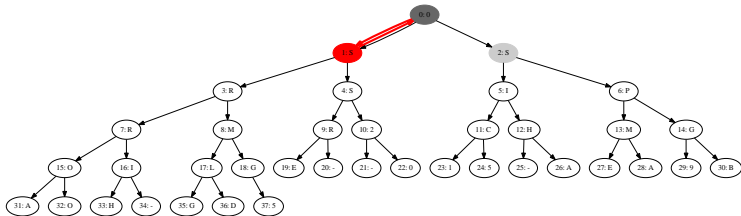No swap is necessary, heapify done.
Heap size: 39 Array contents: TSSRSIPRMR2CHMGOILGE--015-AEA9BAOH-GD50T

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
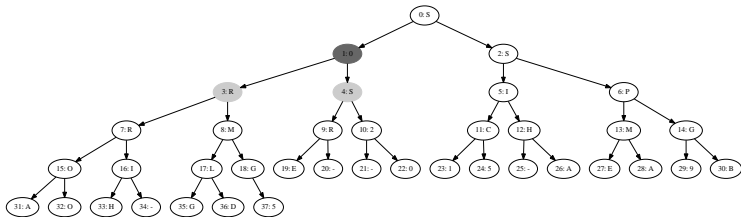Heap size: 39 Array contents: TSSRSIPRMR2CHMGOILGE--015-AEA9BAOH-GD50T

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 38 Array contents: 0SSRSIPRMR2CHMGOILGE--015-AEA9BAOH-GD5TT
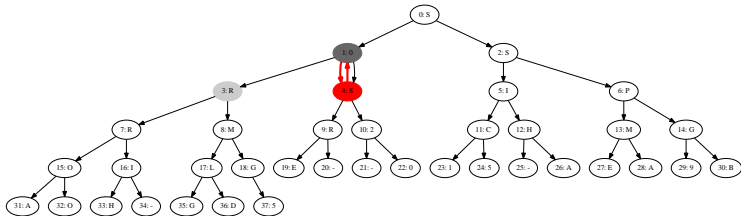
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 38 Array contents: 0SSRSIPRMR2CHMGOILGE--015-AEA9BAOH-GD5TT

Running heapify on node 1.
Heap size: 38 Array contents: S0SRSIPRMR2CHMGOILGE--015-AEA9BAOH-GD5TT

Largest of node 1 and its children is node 4.
Root and max will be swapped and heapify will recurse on the new node 4.
Heap size: 38 Array contents: S0SRSIPRMR2CHMGOILGE--015-AEA9BAOH-GD5TT

Running heapify on node 4.
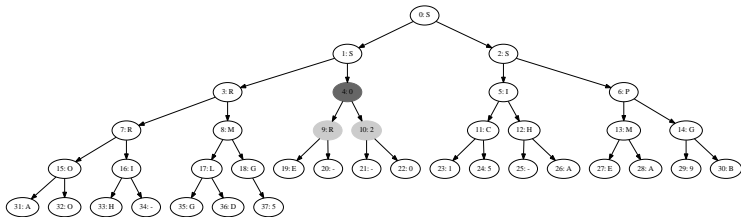Heap size: 38 Array contents: SSSR0IPRMR2CHMGOILGE--015-AEA9BAOH-GD5TT

Largest of node 4 and its children is node 9.
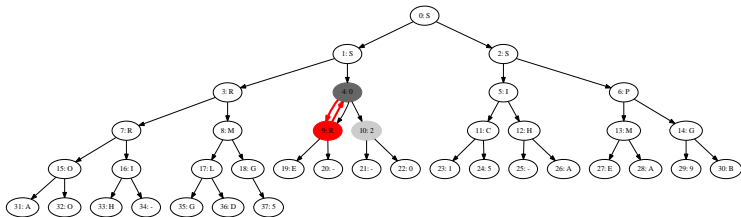Root and max will be swapped and heapify will recurse on the new node 9.
Heap size: 38 Array contents: SSSR0IPRMR2CHMGOILGE--015-AEA9BAOH-GD5TT
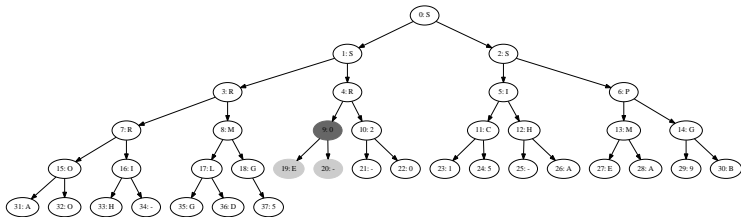
Running heapify on node 9.
Heap size: 38 Array contents: SSSRRIPRM02CHMGOILGE--015-AEA9BAOH-GD5TT
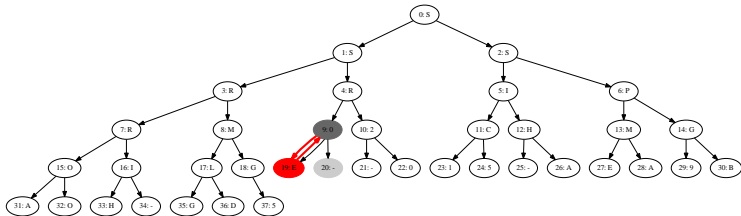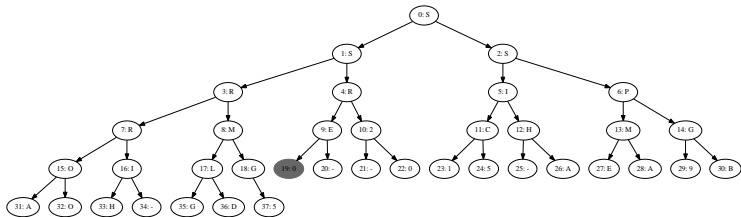
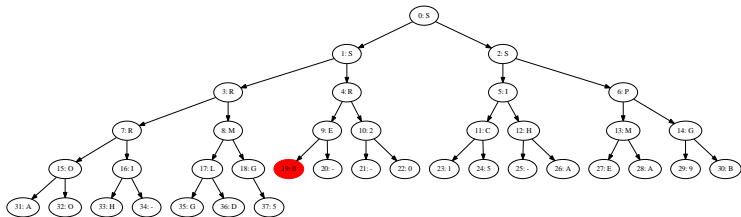Largest of node 9 and its children is node 19.
Root and max will be swapped and heapify will recurse on the new node 19.
Heap size: 38 Array contents: SSSRRIPRM02CHMGOILGE--015-AEA9BAOH-GD5TT
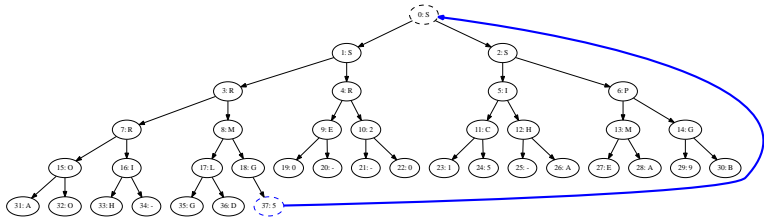
Running heapify on node 19.
Heap size: 38 Array contents: SSSRRIPRME2CHMGOILG0--015-AEA9BAOH-GD5TT
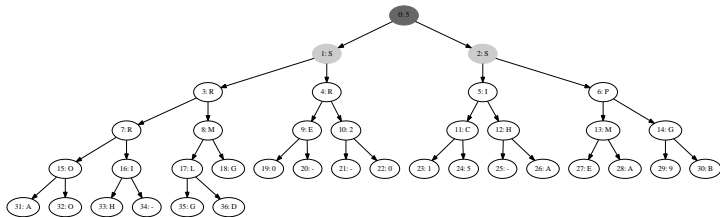
Largest of node 19 and its children is node 19.
No swap is necessary, heapify done.
Heap size: 38 Array contents: SSSRRIPRME2CHMGOILG0–015-AEA9BAOH-GD5TT
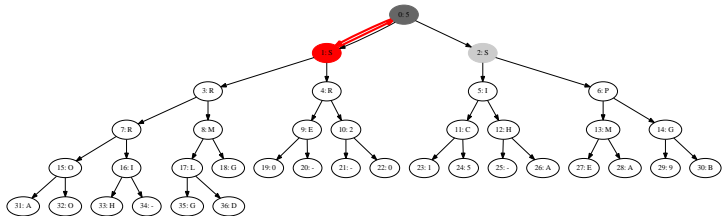
Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
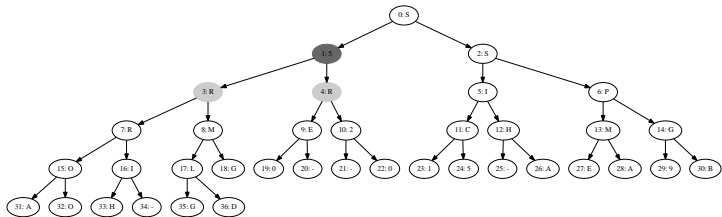Heap size: 38 Array contents: SSSRRIPRME2CHMGOILG0−015−AEA9BAOH−GD5TT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 37 Array contents: 5SSRRIPRME2CHMGOILG0--015-AEA9BAOH-GDSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 37 Array contents: 5SSRRIPRME2CHMGOILG0--015-AEA9BAOH-GDSTT

Running heapify on node 1.
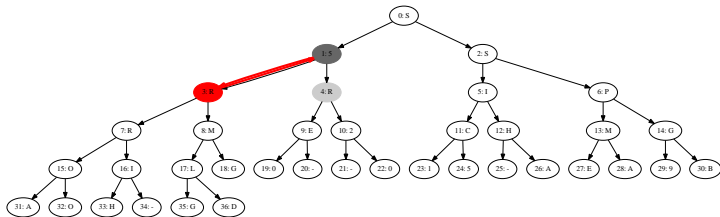Heap size: 37 Array contents: S5SRRIPRME2CHMGOILG0–015-AEA9BAOH-GDSTT

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 37 Array contents: S5SRRIPRME2CHMGOILG0--015-AEA9BAOH-GDSTT
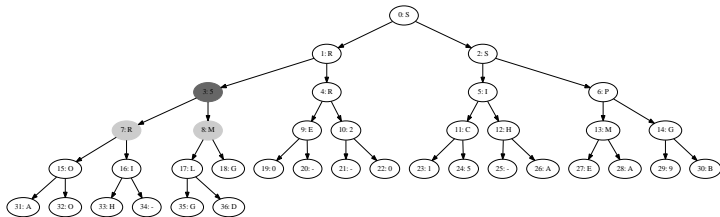
Running heapify on node 3.
Heap size: 37 Array contents: SRS5RIPRME2CHMGOILG0-015-AEA9BAOH-GDSTT
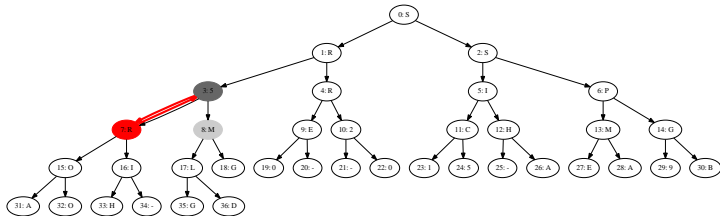
Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 37 Array contents: SRS5RIPRME2CHMGOILG0--015-AEA9BAOH-GDSTT
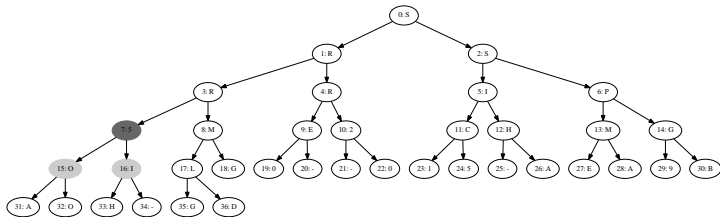
Running heapify on node 7.
Heap size: 37 Array contents: SRSRRIP5ME2CHMGOILG0–015-AEA9BAOH-GDSTT
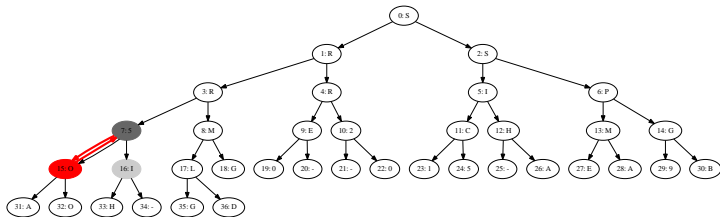
Largest of node 7 and its children is node 15.
Root and max will be swapped and heapify will recurse on the new node 15.
Heap size: 37 Array contents: SRSRRIP5ME2CHMGOILG00--O15-AEA9BAOH-GDSTT

Running heapify on node 15.
Heap size: 37 Array contents: SRSRRPOME2CHMG5ILG0--015-AEA9BAOH-GDSTT

Largest of node 15 and its children is node 32.
Root and max will be swapped and heapify will recurse on the new node 32.
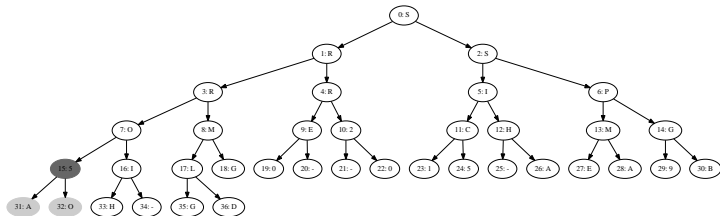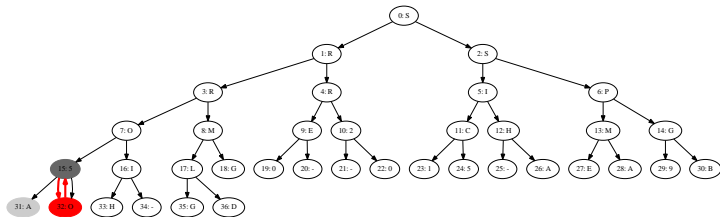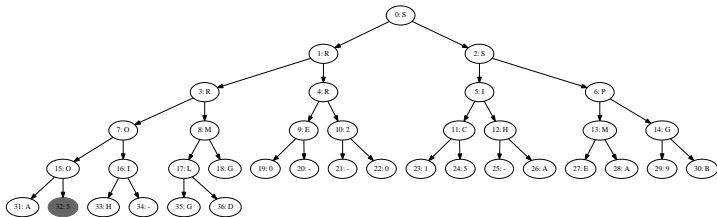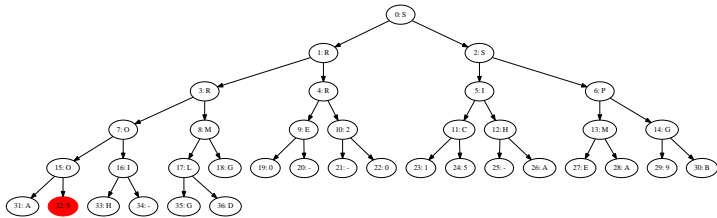Heap size: 37 Array contents: SRSRRIPOME2CHMG5ILG0--015-AEA9BAOH-GDSTT
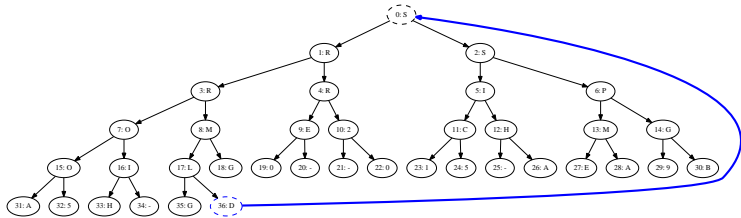
Running heapify on node 32.
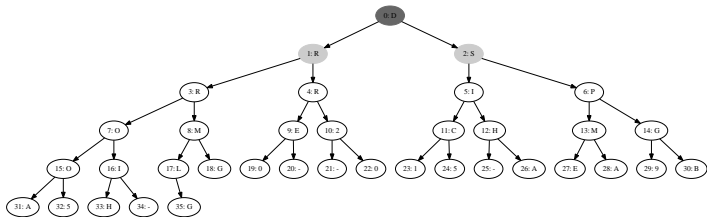Heap size: 37 Array contents: SRSRRIPOME2CHMGOILG0--015-AEA9BA5H-GDSTT

Largest of node 32 and its children is node 32.
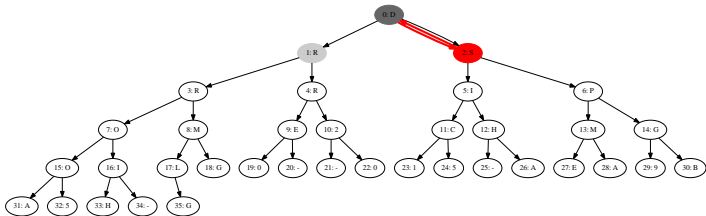No swap is necessary, heapify done.
Heap size: 37 Array contents: SRSRRIPOME2CHMGOILG0--015-AEA9BA5H-GDSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 37 Array contents: SRSRRPOME2CHMGOILG0--015-AEA9BA5H-GDSTT
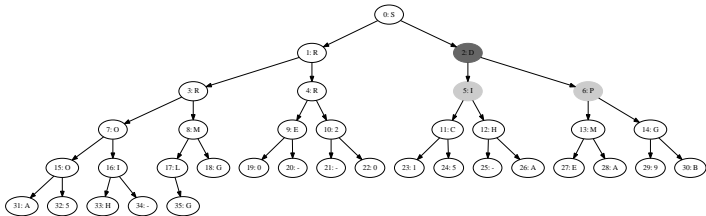
Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 36 Array contents: DRSRRIPOME2CHMG0ILG0--015-AEA9BA5H-GSSTT

Largest of node 0 and its children is node 2.
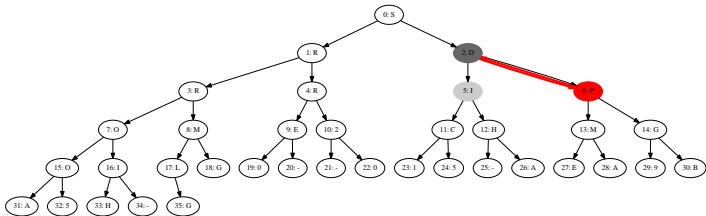Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 36 Array contents: DRSRRIPOME2CHMGOILG0--015-AEA9BA5H-GSSTT

Running heapify on node 2.
Heap size: 36 Array contents: SRDRRIPOME2CHMGOILG0--O15-AEA9BA5H-GSSTT

Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 36 Array contents: SRDRRIPOME2CHMGOILG0--015-AEA9BA5H-GSSTT

Running heapify on node 6.
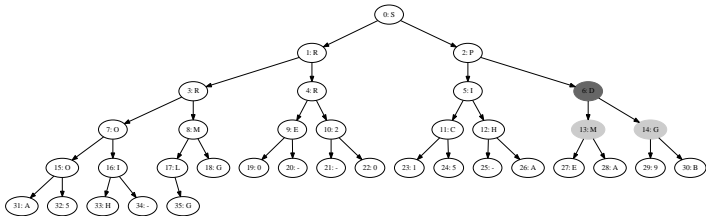Heap size: 36 Array contents: SRPRRIDOME2CHMG0ILG0--015-AEA9BA5H-GSSTT

Largest of node 6 and its children is node 13.
Root and max will be swapped and heapify will recurse on the new node 13.
Heap size: 36 Array contents: SRPRRIDOME2CHMGODLG0--015-AEA9BA5H-GSSTT

Running heapify on node 13.
Heap size: 36 Array contents: SRPRRIMOME2CHDGO1LG0--015-AEA9BA5H-GSSTT

Largest of node 13 and its children is node 27.
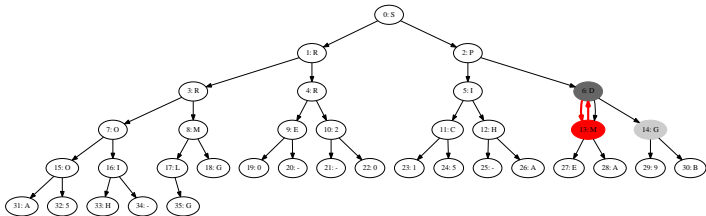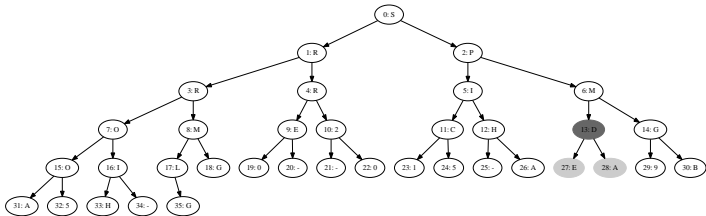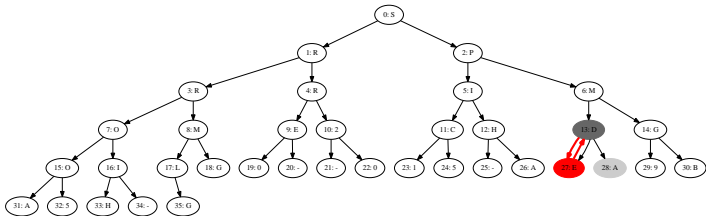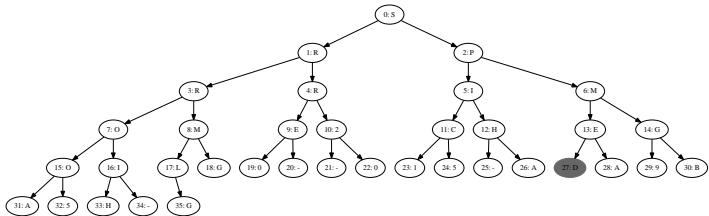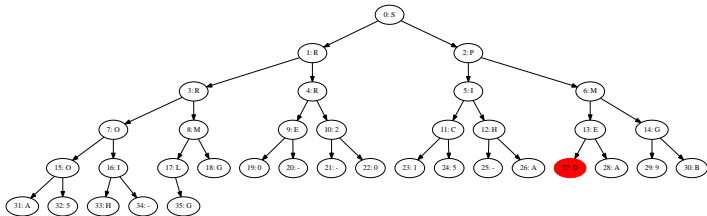Root and max will be swapped and heapify will recurse on the new node 27.
Heap size: 36 Array contents: SRPRRIMOME2CHDGOILG0--015-AEA9BA5H-GSSTT

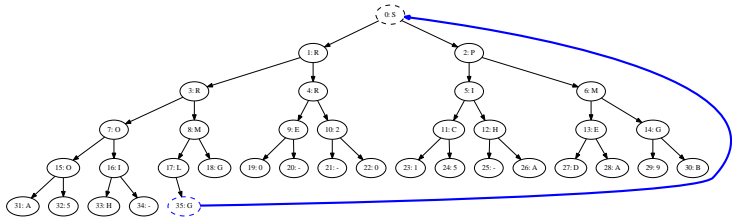Running heapify on node 27.
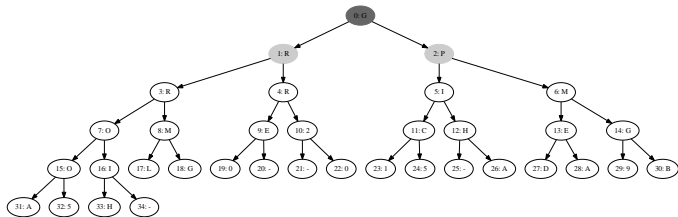Heap size: 36 Array contents: SRPRRIMOME2CHEGOILG0--015-ADA9BA5H-GSSTT

Largest of node 27 and its children is node 27.
No swap is necessary, heapify done.
Heap size: 36 Array contents: SRPRRIMOME2CHEGO1LG0--015-ADA9BA5H-GSSTT
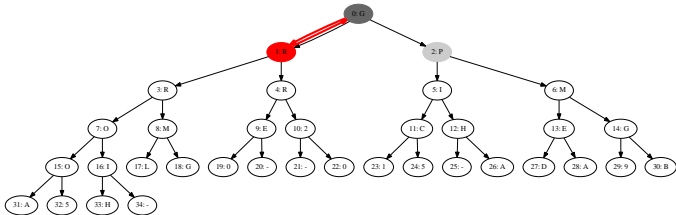
Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 36 Array contents: SRPRRIMOME2CHEGOILG0--015-ADA9BA5H-GSSTT
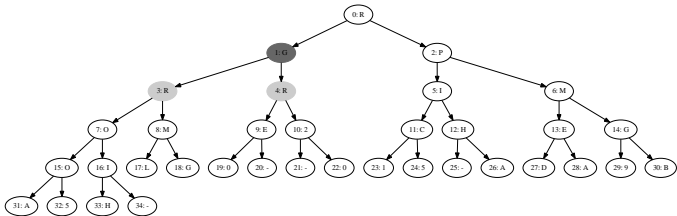
Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 35 Array contents: GRPRRIMOME2CHEGOILG0--015-ADA9BA5H-SSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 35 Array contents: GRPRRIMOME2CHEGOILG0--015-ADA9BA5H-SSSTT

Running heapify on node 1.
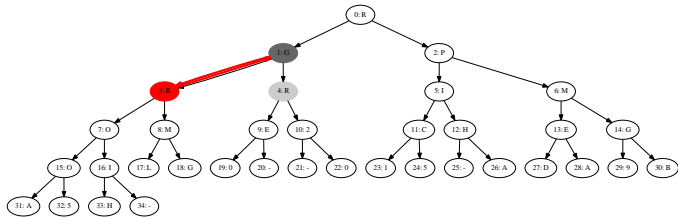Heap size: 35 Array contents: RGPRRIMOME2CHEGOILG0–015-ADA9BA5H-SSSTT

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 35 Array contents: RGPRRIMOME2CHEGOILG0--015-ADA9BA5H-SSSTT
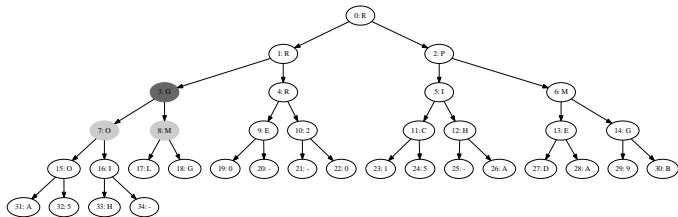
Running heapify on node 3.
Heap size: 35 Array contents: RRPGRIMOME2CHEGOILG0--015-ADA9BA5H-SSSTT
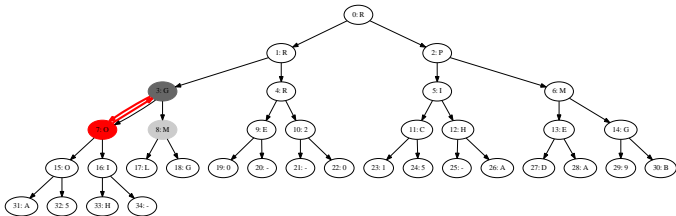
Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 35 Array contents: RRPGRIMOME2CHEGOILG0--015-ADA9BA5H-SSSTT
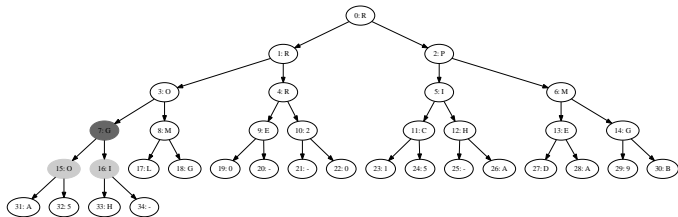
Running heapify on node 7.
Heap size: 35 Array contents: RRPORIMGME2CHEGOILG0--015-ADA9BA5H-SSSTT
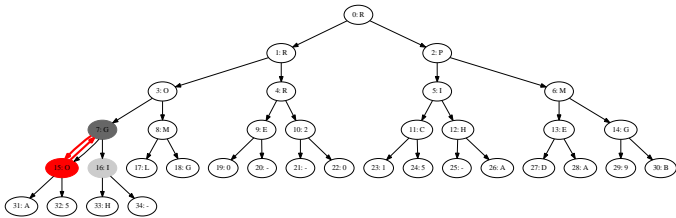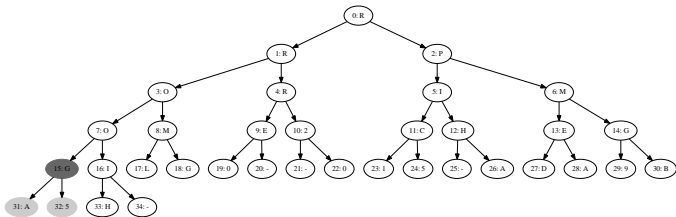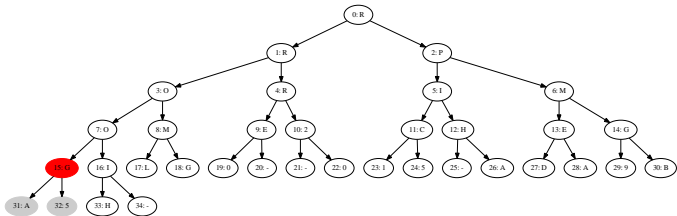
Largest of node 7 and its children is node 15.
Root and max will be swapped and heapify will recurse on the new node 15.
Heap size: 35 Array contents: RRPORIMGME2CHEGOILG0--015-ADA9BA5H-SSSTT

Running heapify on node 15.
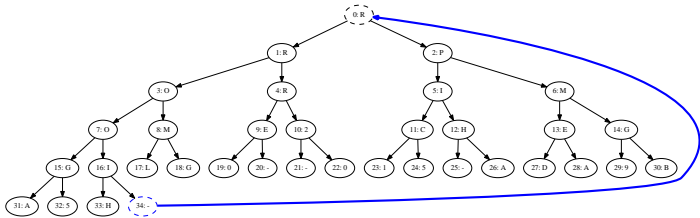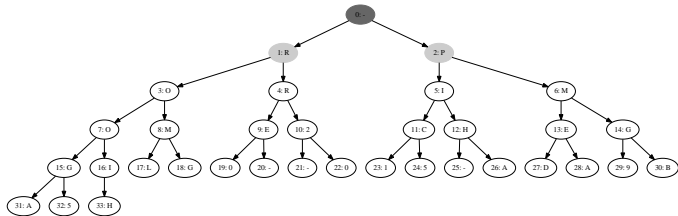Heap size: 35 Array contents: RRPORIMOME2CHEGGILG0--015-ADA9BA5H-SSSTT

Largest of node 15 and its children is node 15.
No swap is necessary, heapify done.
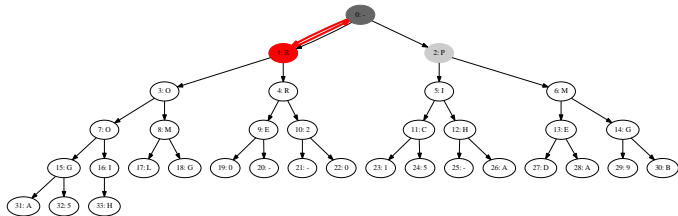Heap size: 35 Array contents: RRPORIMOME2CHEGGILG0--015-ADA9BA5H-SSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 35 Array contents: RRPORIMOME2CHEGGILG0--015-ADA9BA5H-SSSTT
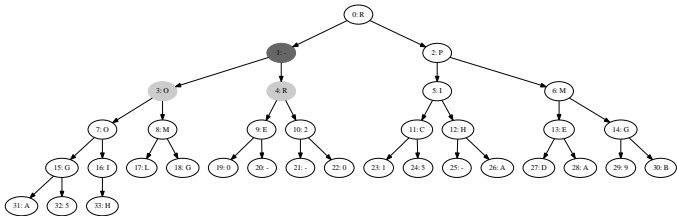
Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 34 Array contents: -RPORIMOME2CHEGGILG0--015-ADA9BA5HRSSSTT

Largest of node 0 and its children is node 1.
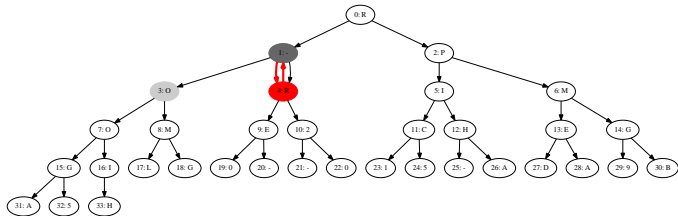Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 34 Array contents: -RPORIMOME2CHEGGILG0--O15-ADA9BA5HRSSSTT

Running heapify on node 1.
Heap size: 34 Array contents: R-PORIMOME2CHEGGILG0--015-ADA9BA5HRSSSTT

Largest of node 1 and its children is node 4.
Root and max will be swapped and heapify will recurse on the new node 4.
Heap size: 34 Array contents: R-PORIMOME2CHEGGILG0--015-ADA9BA5HRSSSTT

Running heapify on node 4.
Heap size: 34 Array contents: RRPO-IMOME2CHEGGILG0--015-ADA9BA5HRSSSTT

Largest of node 4 and its children is node 9.
Root and max will be swapped and heapify will recurse on the new node 9.
Heap size: 34 Array contents: RRPO-IMOME2CHEGGILG0--015-ADA9BA5HRSSSTT
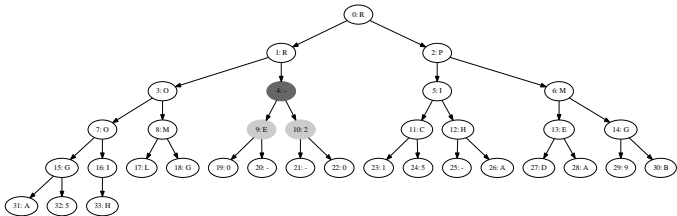
Running heapify on node 9.
Heap size: 34 Array contents: RRPOEIMOM-2CHEGGILG0--015-ADA9BA5HRSSSTT

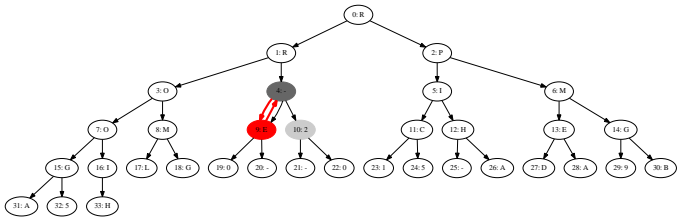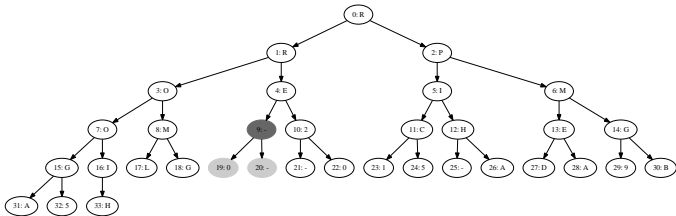Largest of node 9 and its children is node 19.
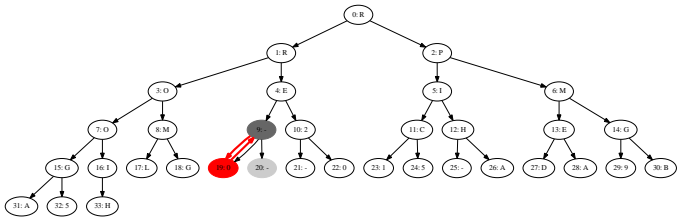Root and max will be swapped and heapify will recurse on the new node 19.
Heap size: 34 Array contents: RRPOEIMOM-2CHEGGILG0--015-ADA9BA5HRSSSTT
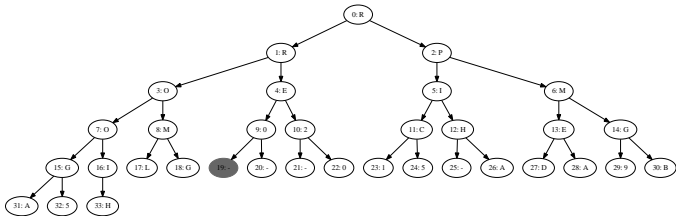
Running heapify on node 19.
Heap size: 34 Array contents: RRPOEIMOM02CHEGGILG—015-ADA9BA5HRSSSTT

Largest of node 19 and its children is node 19.
No swap is necessary, heapify done.
Heap size: 34 Array contents: RRPOEIMOMI2CHEGGILG—015-ADA9BA5HRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 34 Array contents: RRPOEIMOMI2CHEGGILG---015-ADA9BA5HRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
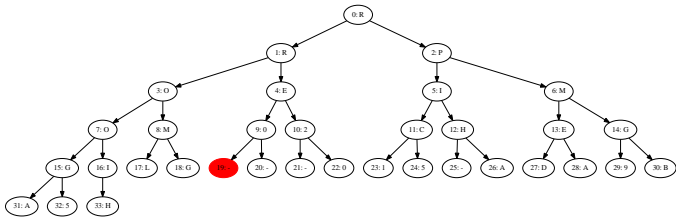Heap size: 33 Array contents: HRPOEIMOM02CHEGGILG---015-ADA9BA5RRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 33 Array contents: HRPOEIMOMI2CHEGGILG---015-ADA9BA5RRSSSTT
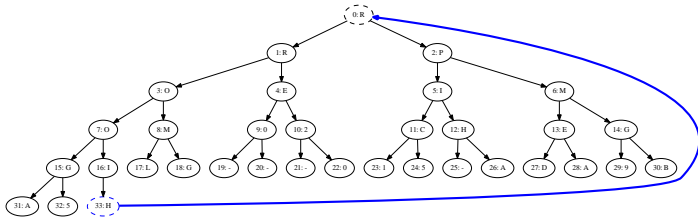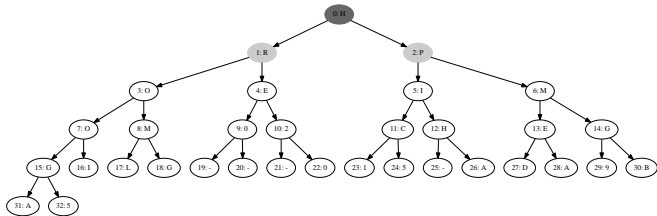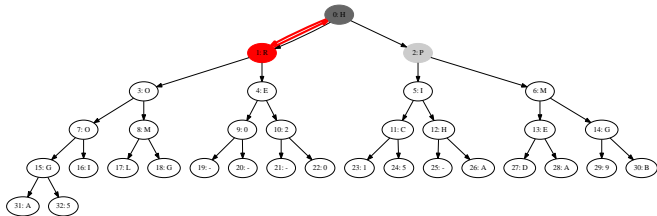
Running heapify on node 1.
Heap size: 33 Array contents: RHPOEIMOM02CHEGGILG---015-ADA9BA5RRSSSTT

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 33 Array contents: RHPOEIMOMI2CHEGGILG---015-ADA9BA5RRSSSTT

Running heapify on node 3.
Heap size: 33 Array contents: ROPHEIMOMI02CHEGGILG---015-ADA9BA5RRSSSTT

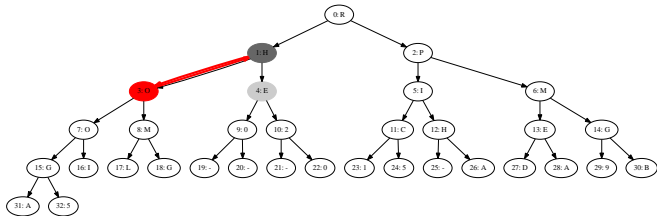Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
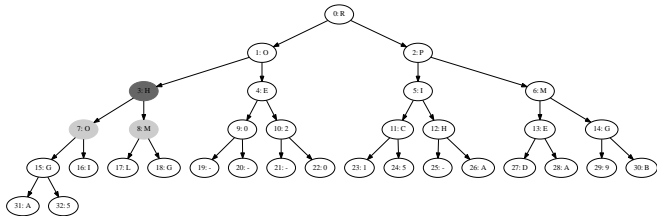Heap size: 33 Array contents: ROPHEIMOMI2CHEGGILG---015-ADA9BA5RRSSSTT

Running heapify on node 7.
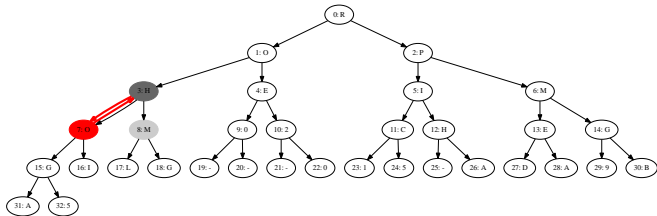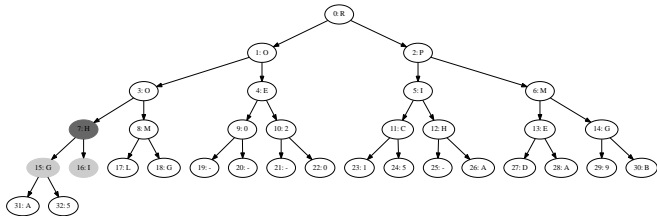Heap size: 33 Array contents: ROPOEIMHMI2CHEGGILG—-015-ADA9BA5RRSSSTT

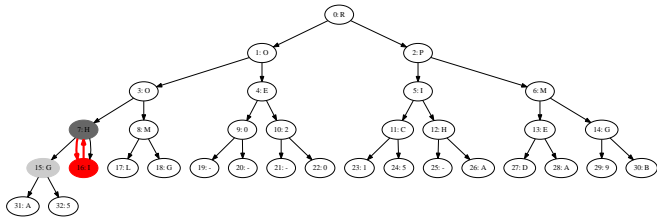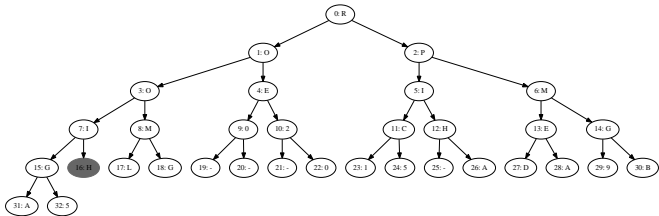Largest of node 7 and its children is node 16.
Root and max will be swapped and heapify will recurse on the new node 16.
Heap size: 33 Array contents: ROPOEIMHMI2CHEGGILG---015-ADA9BA5RRSSSTT

Running heapify on node 16.
Heap size: 33 Array contents: ROPOEIMIM02CHEGGHLG---015-ADA9BA5RRSSSTT

Largest of node 16 and its children is node 16.
No swap is necessary, heapify done.
Heap size: 33 Array contents: ROPOEIMIMI02CHEGGHLG---015-ADA9BA5RRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 33 Array contents: ROPOEIMIMI2CHEOGHLG---015-ADA9BA5RRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
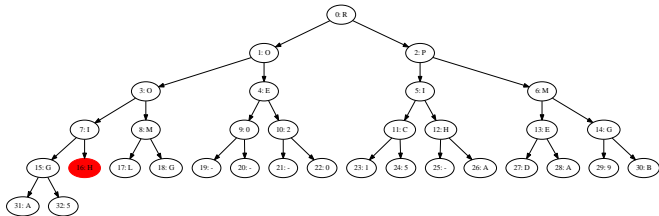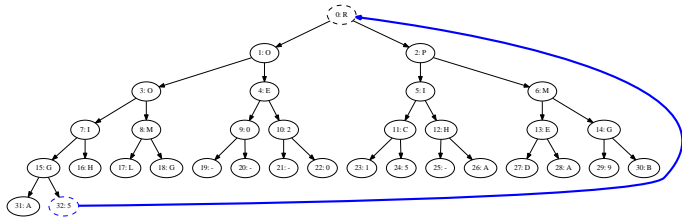Heap size: 32 Array contents: 5OPOEIMIMI2CHEGGHLG—015-ADA9BARRRSSSTT

Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 32 Array contents: 5OPOEIMIM02CHEGGHLG---015-ADA9BARRRSSSTT

Running heapify on node 2.
Heap size: 32 Array contents: PO5OEIMIMI2CHEGGHLG---015-ADA9BARRRSSSTT
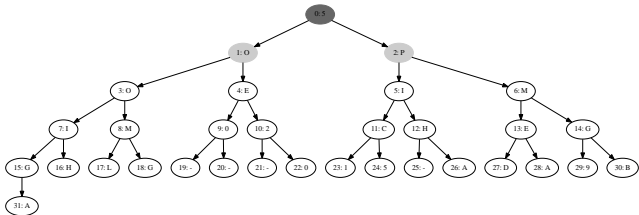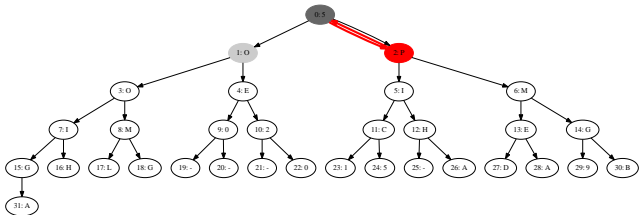
Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 32 Array contents: PO5OEIMIM02CHEGGHLG---015-ADA9BARRRSSSTT

Running heapify on node 6.
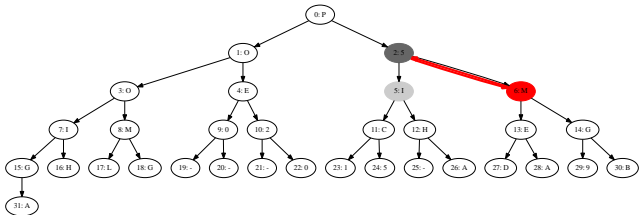Heap size: 32 Array contents: POMOEI5IMI2CHEGGHLG---015-ADA9BARRRSSSTT

Largest of node 6 and its children is node 14.
Root and max will be swapped and heapify will recurse on the new node 14.
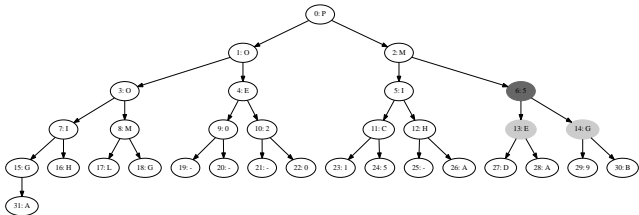Heap size: 32 Array contents: POMOEI5IM02CHEGGHLG---O15-ADA9BARRRSSSTT

Running heapify on node 14.
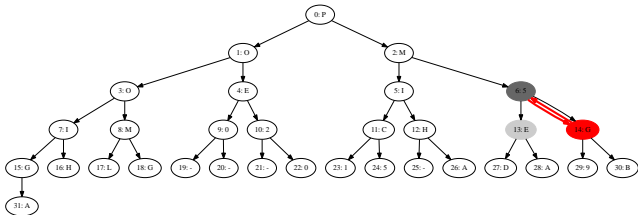Heap size: 32 Array contents: POMOEIGIMI02CHE5GHLG---015-ADA9BARRRSSSTT

Largest of node 14 and its children is node 30.
Root and max will be swapped and heapify will recurse on the new node 30.
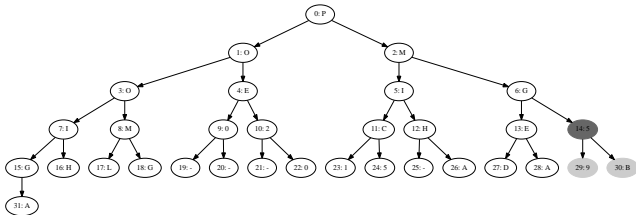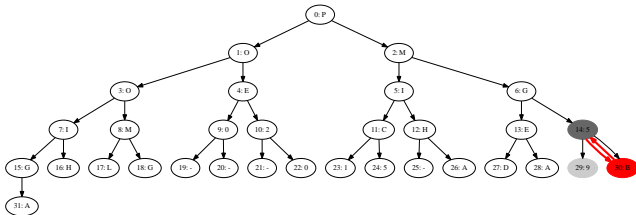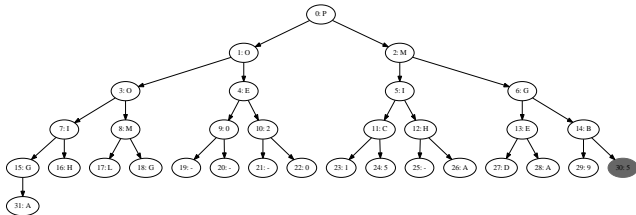Heap size: 32 Array contents: POMOEIGIM02CHE5GHLG---015-ADA9BARRRSSSTT

Running heapify on node 30.
Heap size: 32 Array contents: POMOEIGIMI02CHEBGHLG---015-ADA95ARRRSSSTT

Largest of node 30 and its children is node 30.
No swap is necessary, heapify done.
Heap size: 32 Array contents: POMOEIGIM02CHEBGHLG—015-ADA95ARRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 32 Array contents: POMOEIGIM02CHEBGHLG---015-ADA95ABRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
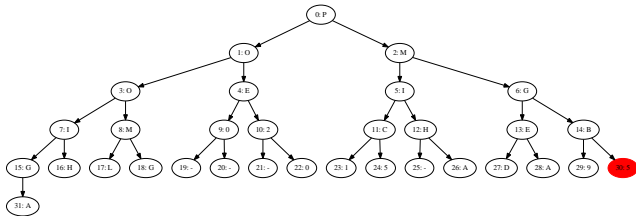Heap size: 31 Array contents: AOMOEIGIMI02CHEBGHLG---015-ADA95PRRRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
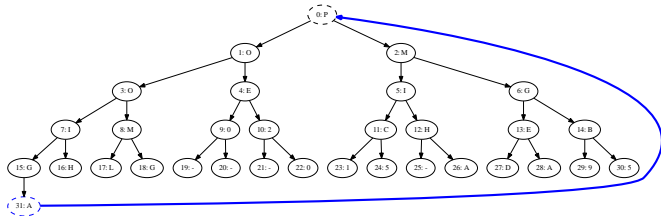Heap size: 31 Array contents: AOMOEIGIM02CHEBGHLG---015-ADA95PRRRSSSTT
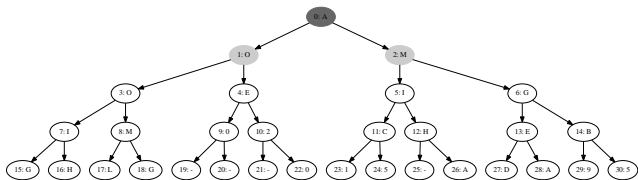
Running heapify on node 1.
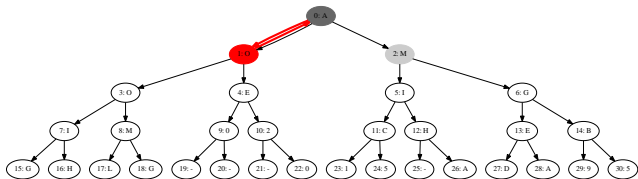Heap size: 31 Array contents: OAMOEIGIM02CHEBGHLG—015-ADA95PRRRSSSTT

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 31 Array contents: OAMOEIGIM02CHEBGHLG---015-ADA95PRRRSSSTT

Running heapify on node 3.
Heap size: 31 Array contents: OOMAEIGIM02CHEBGHLG—015-ADA95PRRRSSSTT

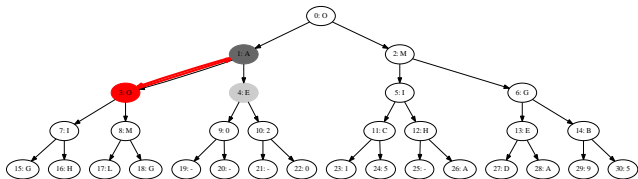Largest of node 3 and its children is node 8.
Root and max will be swapped and heapify will recurse on the new node 8.
Heap size: 31 Array contents: OOMAEIGIM02CHEBGHLG—015-ADA95PRRRSSSTT
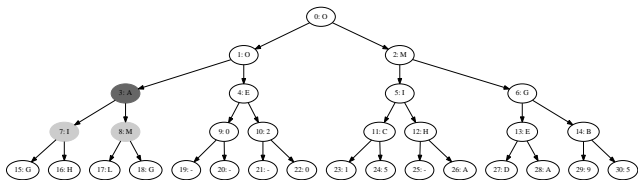
Running heapify on node 8.
Heap size: 31 Array contents: OOMMEIGIAti2CHEBGHLG---015-ADA95PRRRSSSTT

Largest of node 8 and its children is node 17.
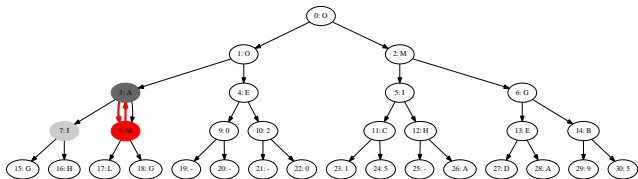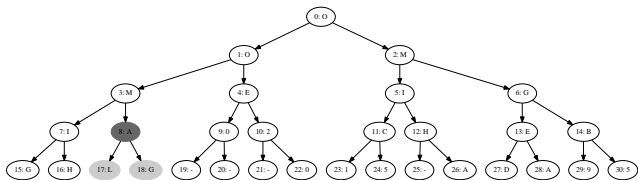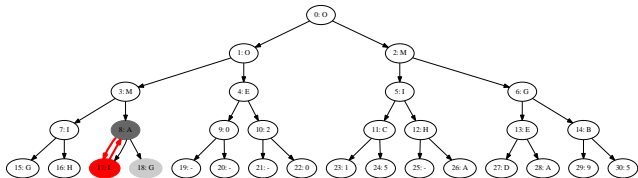Root and max will be swapped and heapify will recurse on the new node 17.
Heap size: 31 Array contents: OOMMEIGIA02CHEBGHLG---015-ADA95PRRRSSSTT

Running heapify on node 17.
Heap size: 31 Array contents: OOMMEIGIL02CHEBGHAG---015-ADA95PRRRSSSTT

Largest of node 17 and its children is node 17.
No swap is necessary, heapify done.
Heap size: 31 Array contents: OOMMEIGILI2CHEBGHAG---015-ADA95PRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 31 Array contents: OOMMEIGILI2CHEBGHAG—015-ADA95PRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 30 Array contents: 5OMMEIGIL02CHEBGHAG---015-ADA9OPRRRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 30 Array contents: 5OMMEIGIL02CHEBGHAG---015-ADA9OPRRRSSSTT
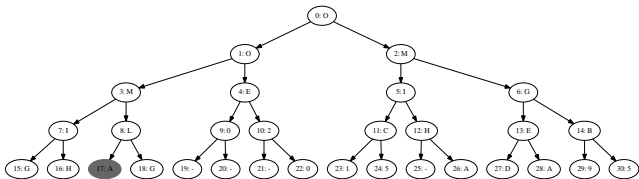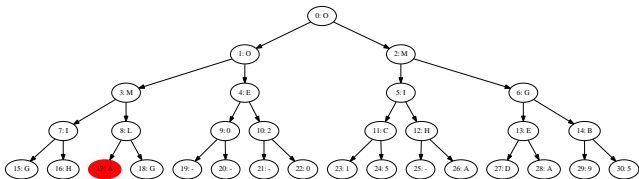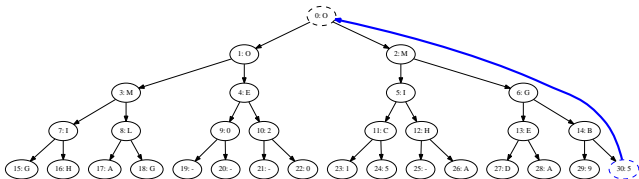
Running heapify on node 1.
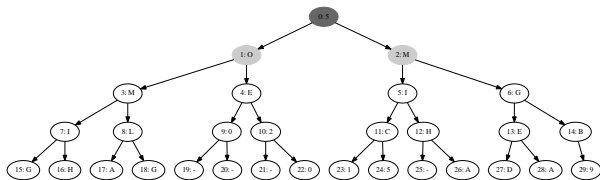Heap size: 30 Array contents: O5MMEIGIL02CHEBGHAG---015-ADA9OPRRRSSSTT

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 30 Array contents: O5MMEIGIL02CHEBGHAG---015-ADA9OPRRRSSSTT

Running heapify on node 3.
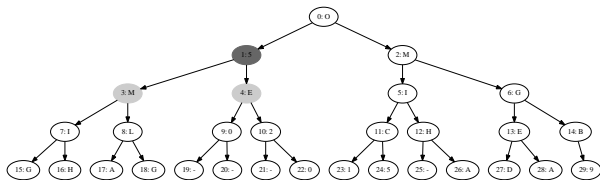Heap size: 30 Array contents: OMMSEIGILI02CHEBGHAG---015-ADA9OPRRRSSSTT

Largest of node 3 and its children is node 8.
Root and max will be swapped and heapify will recurse on the new node 8.
Heap size: 30 Array contents: OMM5EIGIL02CHEBGHAG---015-ADA9OPRRRSSSTT

Running heapify on node 8.
Heap size: 30 Array contents: OMMLEIGI502CHEBGHAG---015-ADA9OPRRRSSSTT

Largest of node 8 and its children is node 18.
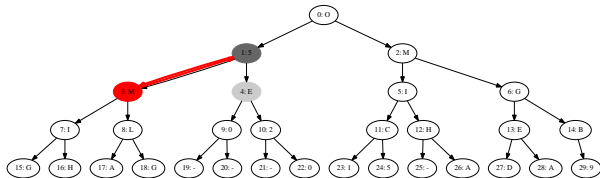Root and max will be swapped and heapify will recurse on the new node 18.
Heap size: 30 Array contents: OMMLEIGI502CHEBGHAG---015-ADA9OPRRRSSSTT
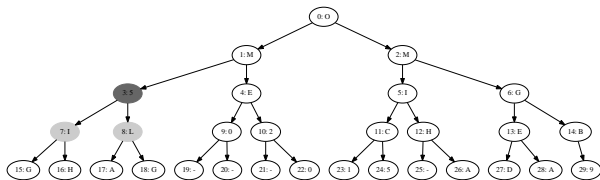
Running heapify on node 18.
Heap size: 30 Array contents: OMMLEIGIG02CHEBGHA5---015-ADA9OPRRRSSSTT
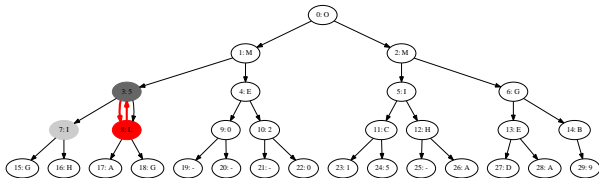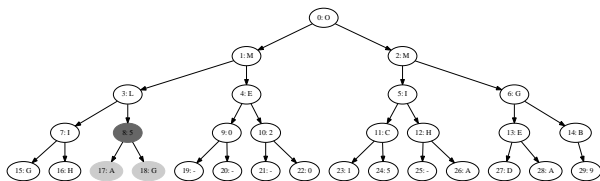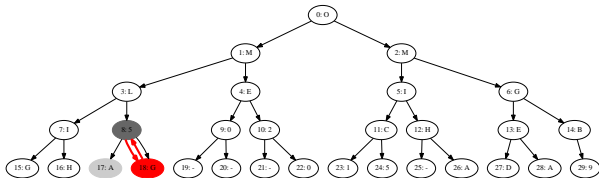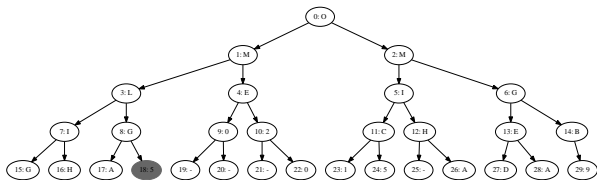
Largest of node 18 and its children is node 18.
No swap is necessary, heapify done.
Heap size: 30 Array contents: OMMLEIGIG02CHEBGHA5---015-ADA9OPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 30 Array contents: OMMLEIGIG02CHEBGHA5---015-ADA9OPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 29 Array contents: 9MMLEIGIG02CHEBGHA5—015-ADAOOPRRRSSSTT
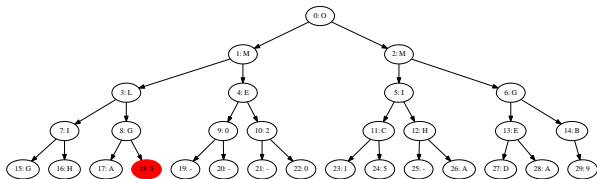
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 29 Array contents: 9MMLEIGIG02CHEBGHA5—015-ADAOOPRRRSSSTT

Running heapify on node 1.
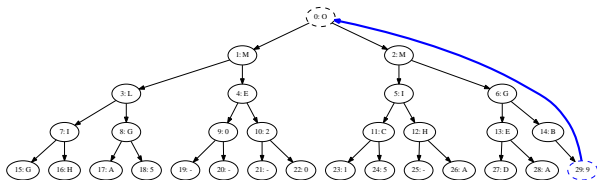Heap size: 29 Array contents: M9MLEIGIGI02CHEBGHA5---015-ADAOOPRRRSSSTT

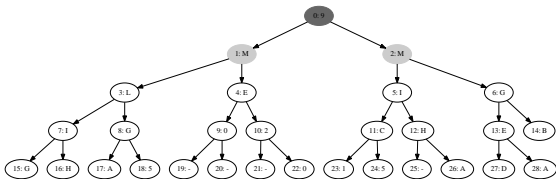Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 29 Array contents: M9MLEIGIG02CHEBGHA5---015-ADAOOPRRRSSSTT

Running heapify on node 3.
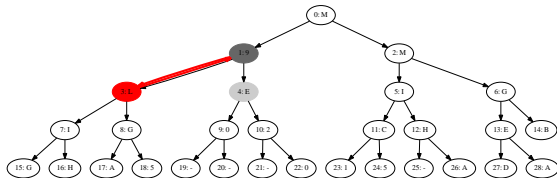Heap size: 29 Array contents: MLM9EIGIG02CHEBGHA5---015-ADAOOPRRRSSSTT

Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 29 Array contents: MLM9EIGIG02CHEBGHA5—015-ADAOOPRRRSSSTT

Running heapify on node 7.
Heap size: 29 Array contents: MLMIEIO9G02CHEBGHA5---015-ADAOOPRRRSSSTT

Largest of node 7 and its children is node 16.
Root and max will be swapped and heapify will recurse on the new node 16.
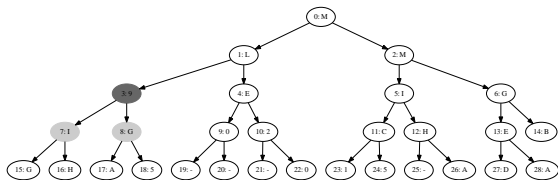Heap size: 29 Array contents: MLMIEIG9G02CHEBGHA5—015-ADAOOPRRRSSSTT

Running heapify on node 16.
Heap size: 29 Array contents: MLMIEIGHG02CHEBG9A5—015-ADAOOPRRRSSSTT

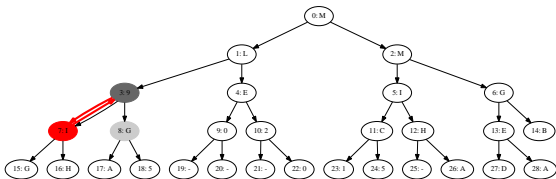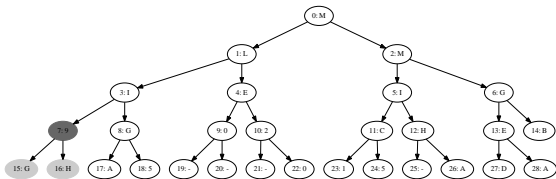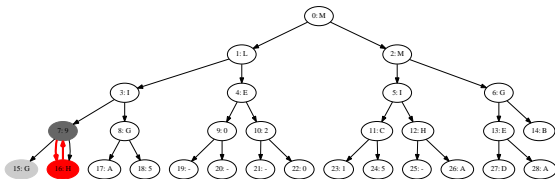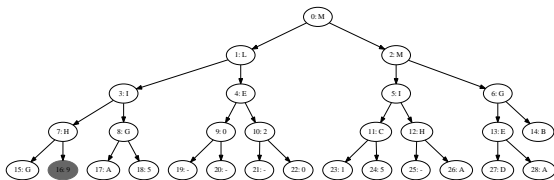Largest of node 16 and its children is node 16.
No swap is necessary, heapify done.
Heap size: 29 Array contents: MLMIEIGHG02CHEBG9A5—015-ADAOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 29 Array contents: MLMIEIGHGI2CHEBG9A5---015-ADAOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
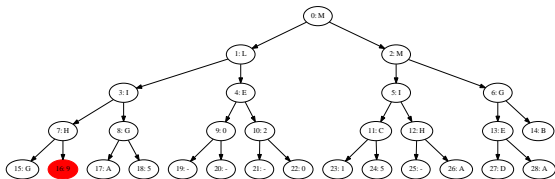Heap size: 28 Array contents: ALMIEIGHG02CHEBG9A5---015-ADMOOPRRRSSSTT

Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 28 Array contents: ALMIE3GHG02CHEBG9A5---015-ADMOOPRRRSSSTT
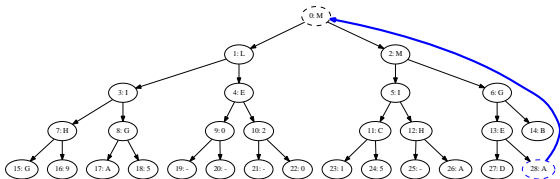
Running heapify on node 2.
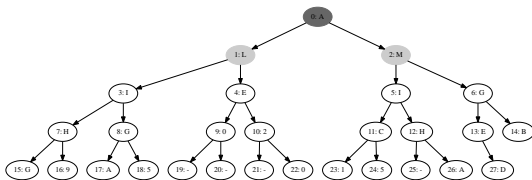Heap size: 28 Array contents: MLAIEIGHG02CHEBG9A5---015-ADMOOPRRRSSSTT

Largest of node 2 and its children is node 5.
Root and max will be swapped and heapify will recurse on the new node 5.
Heap size: 28 Array contents: MLAIBGHG02CHEBG9A5---015-ADMOOPRRRSSSTT

Running heapify on node 5.
Heap size: 28 Array contents: MLIIEAGHG02CHEBG9A5---015-ADMOOPRRRSSSTT

Largest of node 5 and its children is node 12.
Root and max will be swapped and heapify will recurse on the new node 12.
Heap size: 28 Array contents: MLIIEAGHG02CHEBG9A5---015-ADMOOPRRRSSSTT

Running heapify on node 12.
Heap size: 28 Array contents: MLIIEHGHG02CAEBG9A5---015-ADMOOPRRRSSSTT

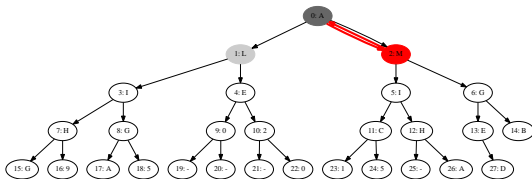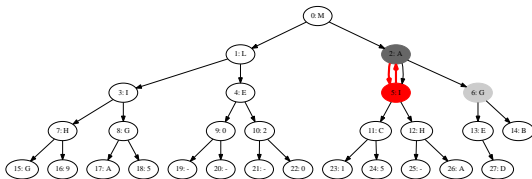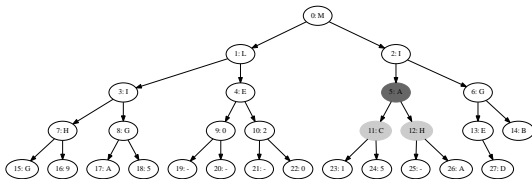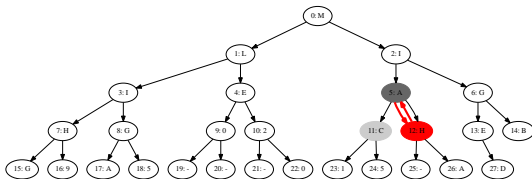Largest of node 12 and its children is node 12.
No swap is necessary, heapify done.
Heap size: 28 Array contents: MLIIEHGHG02CAEBG9A5---015-ADMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 28 Array contents: MLIIEHGHG02CAEBG9A5--015-ADMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
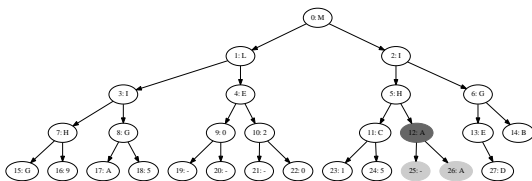Heap size: 27 Array contents: DLIIEHGHG02CAEBG9A5---015-AMMOOPRRRSSSTT
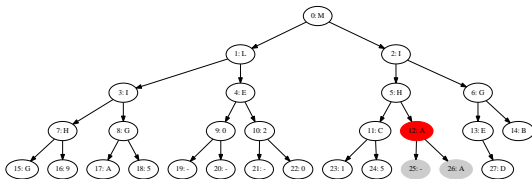
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 27 Array contents: DLIIEHGHG02CAEBG9A5---015-AMMOOPRRRSSSTT
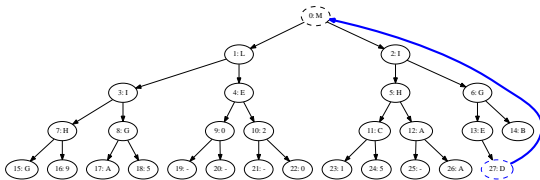
Running heapify on node 1.
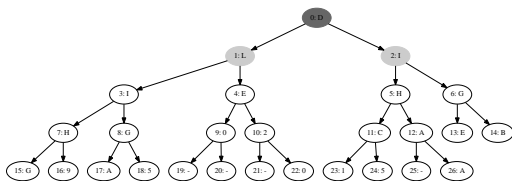Heap size: 27 Array contents: LDIIEHGHG02CAEBG9A5—015-AMMOOPRRRSSSTT

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 27 Array contents: LDIIEHGHG02CAEBG9A5—015-AMMOOPRRRSSSTT

Running heapify on node 3.
Heap size: 27 Array contents: LIIDEHGHG02CAEBG9A5—015-AMMOOPRRRSSSTT

Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 27 Array contents: LIIDEHGHG02CAEBG9A5---015-AMMOOPRRRSSSTT

Running heapify on node 7.
Heap size: 27 Array contents: LIIHEHGDG02CAEBG9A5—015-AMMOOPRRRSSSTT

Largest of node 7 and its children is node 15.
Root and max will be swapped and heapify will recurse on the new node 15.
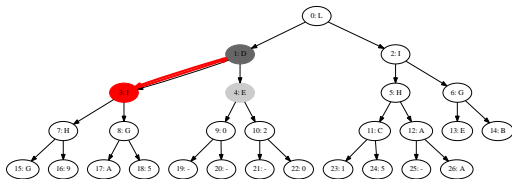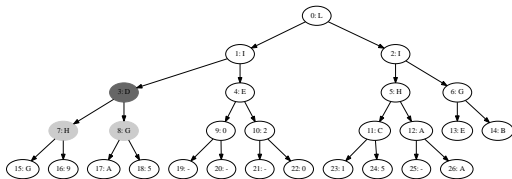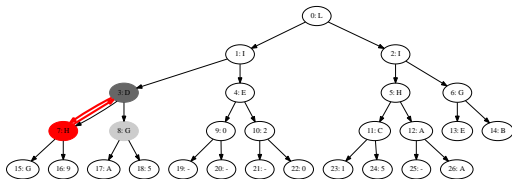Heap size: 27 Array contents: LIIHEHGDG02CAEBG9A5---015-AMMOOPRRRSSSTT
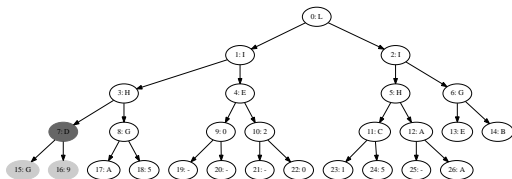
Running heapify on node 15.
Heap size: 27 Array contents: LIIHEHOGGO2CAEBD9A5---O15-AMMOOPRRRSSSTT

Largest of node 15 and its children is node 15.
No swap is necessary, heapify done.
Heap size: 27 Array contents: LIIHEHGGG02CAEBD9A5—015-AMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 27 Array contents: LIIHEHGGG02CAEBD9A5---015-AMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 26 Array contents: AIIHEHGGG02CAEBD9A5---015-LMMOOPRRRSSSTT

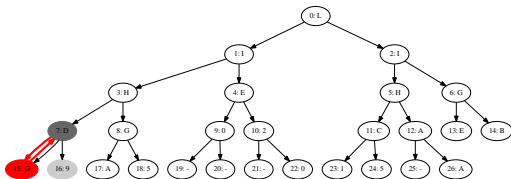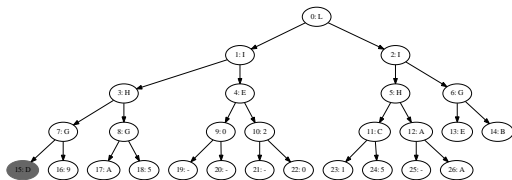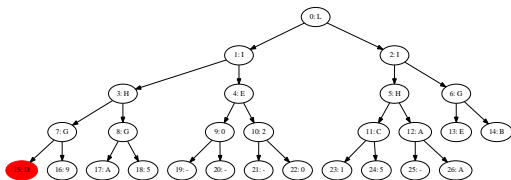Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 26 Array contents: AIIHEHGGG02CAEBD9A5---015-LMMOOPRRRSSSTT
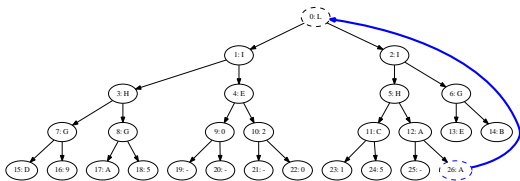
Running heapify on node 1.
Heap size: 26 Array contents: IAIHEHGGG02CAEBD9A5---015-LMMOOPRRRSSSTT

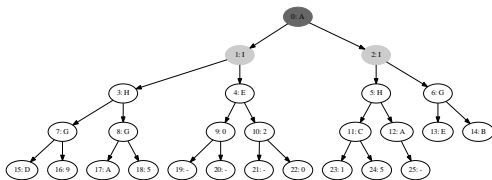Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 26 Array contents: IAIHEHGGG02CAEBD9A5---015-LMMOOPRRRSSSTT

Running heapify on node 3.
Heap size: 26 Array contents: IHIAEHGGG02CAEBD9A5---015-LMMOOPRRRSSSTT

Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 26 Array contents: IHIAEHGGG02CAEBD9A5---015-LMMOOPRRRSSSTT

Running heapify on node 7.
Heap size: 26 Array contents: IHIGEHGAG02CAEBD9A5---015-LMMOOPRRRSSSTT

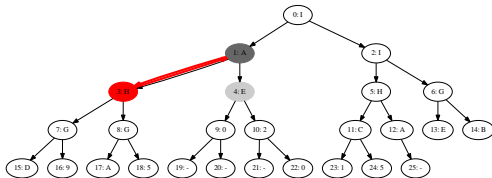Largest of node 7 and its children is node 15.
Root and max will be swapped and heapify will recurse on the new node 15.
Heap size: 26 Array contents: IHIGEHGAG02CAEBD9A5---015-LMMOOPRRRSSSTT
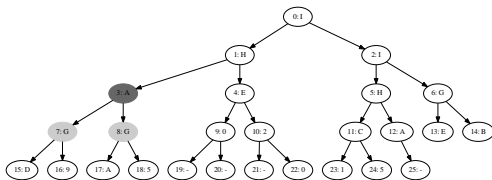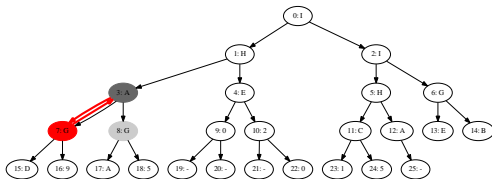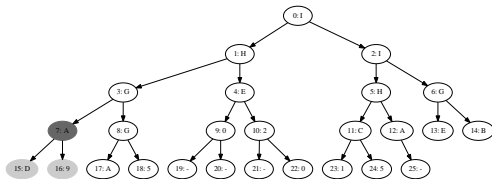
Running heapify on node 15.
Heap size: 26 Array contents: IHIGEHGDG02CAEBA9A5---015-LMMOOPRRRSSSTT

Largest of node 15 and its children is node 15.
No swap is necessary, heapify done.
Heap size: 26 Array contents: IHIGEHGDG02CAEBA9A5---015-LMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 26 Array contents: IHIGEHGDG02CAEBA9A5---015-LMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 25 Array contents: -HIGEHGDG02CAEBA9A5---015ILMMOOPRRRSSSTT

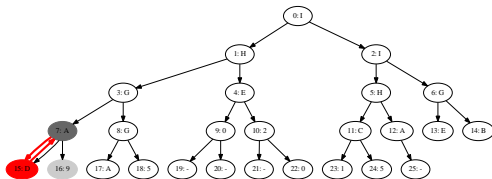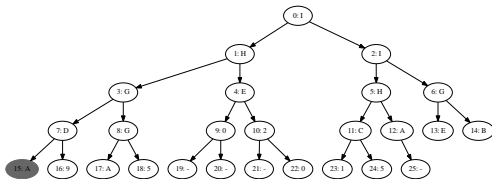Largest of node 0 and its children is node 2.
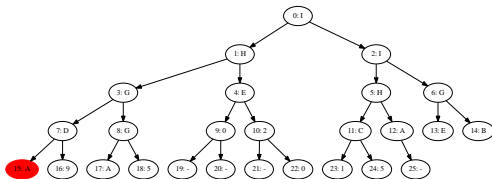Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 25 Array contents: -HIGEHGDG02CAEBA9A5--015ILMMOOPRRRSSSTT

Running heapify on node 2.
Heap size: 25 Array contents: IH-GEHGDG02CAEBA9A5---015ILMMOOPRRRSSSTT

Largest of node 2 and its children is node 5.
Root and max will be swapped and heapify will recurse on the new node 5.
Heap size: 25 Array contents: IH-GEHGDG02CAEBA9A5---015ILMMOOPRRRSSSTT
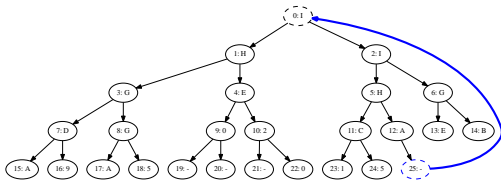
Running heapify on node 5.
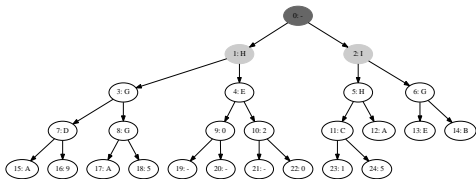Heap size: 25 Array contents: IHHGE-GDG02CAEBA9A5---015ILMMOOPRRRSSSTT

Largest of node 5 and its children is node 11.
Root and max will be swapped and heapify will recurse on the new node 11.
Heap size: 25 Array contents: IHHGE-GDG02CAEBA9A5---015ILMMOOPRRRSSSTT

Running heapify on node 11.
Heap size: 25 Array contents: IHHGECGDG02-AEBA9A5---015ILMMOOPRRRSSSTT

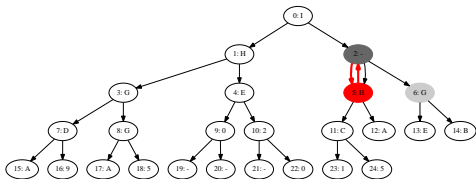Largest of node 11 and its children is node 24.
Root and max will be swapped and heapify will recurse on the new node 24.
Heap size: 25 Array contents: IHHGECGDG02-AEBA9A5---015ILMMOOPRRRSSSTT
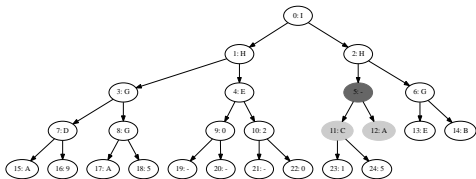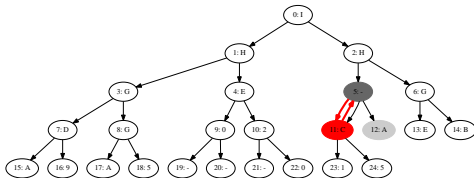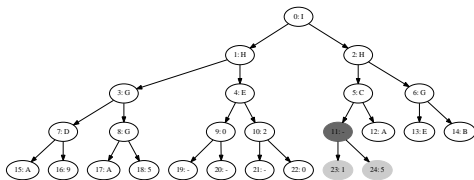
Running heapify on node 24.
Heap size: 25 Array contents: IHHGECGDG025AEBA9A5---01-ILMMOOPRRRSSSTT

Largest of node 24 and its children is node 24.
No swap is necessary, heapify done.
Heap size: 25 Array contents: IHHGECGDG025AEBA9A5---01-ILMMOOPRRRSSSTT

Removing root and moving it outside the heap.
The last element takes its place and the heap size is decremented.
Heap size: 25 Array contents: IHHGECGDG025AEBA9A5---01-ILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 24 Array contents: -HHGECGDG025AEBA9A5---01HLMMOOPRRRSSSTT
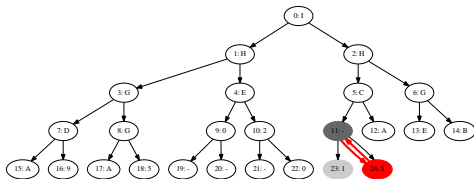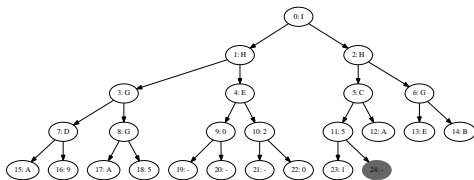
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 24 Array contents: -HHGECGDG025AEBA9A5---011ILMMOOPRRRSSSTT

Running heapify on node 1.
Heap size: 24 Array contents: H-HGECGDG025AEBA9A5---011ILMMOOPRRRSSSTT
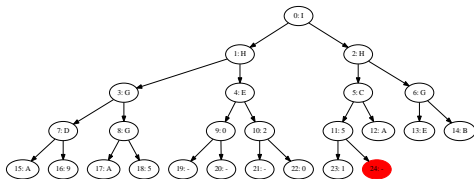
Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
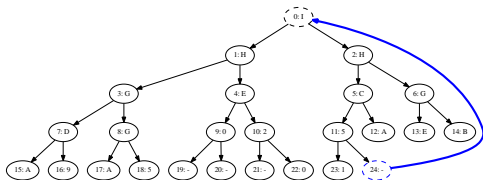Heap size: 24 Array contents: H-HGECGDG025AEBA9A5---01IILMMOOPRRRSSSTT

Running heapify on node 3.
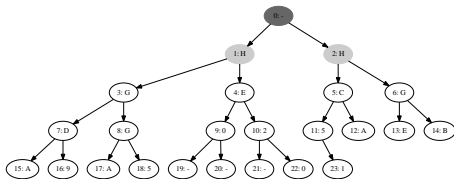Heap size: 24 Array contents: HGIH-ECGDG025AEBA9A5---01IILMMOOPRRRSSSTT

Largest of node 3 and its children is node 8.
Root and max will be swapped and heapify will recurse on the new node 8.
Heap size: 24 Array contents: HGH-ECGDG025AEBA9A5---011ILMMOOPRRRSSSTT

Running heapify on node 8.
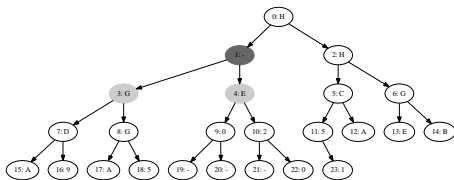Heap size: 24 Array contents: HGHGECGD-025AEBA9A5---01IILMMOOPRRRSSSTT

Largest of node 8 and its children is node 17.
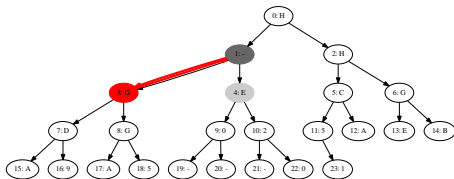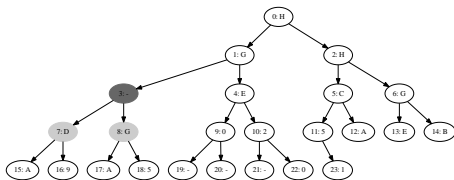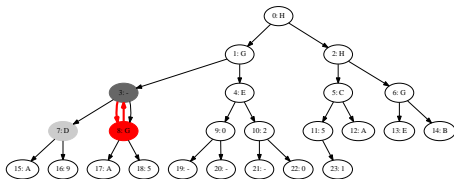Root and max will be swapped and heapify will recurse on the new node 17.
Heap size: 24 Array contents: HGHGECGD-025AEBA9A5---011ILMMOOPRRRSSSTT
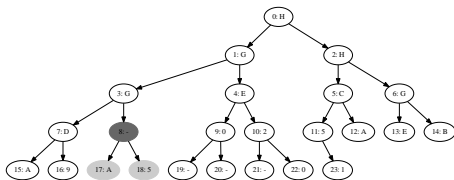
Running heapify on node 17.
Heap size: 24 Array contents: HGHGECGDA025AEBA9-5---011ILMMOOPRRRSSSTT

Largest of node 17 and its children is node 17.
No swap is necessary, heapify done.
Heap size: 24 Array contents: HGHGECGDA025AEBA9-5---011ILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 24 Array contents: HGHGECGDA025AEBA/9-5---01IILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 23 Array contents: 1GHGECGDA025AEBA9-5---0HIILMMOOPRRRSSSTT

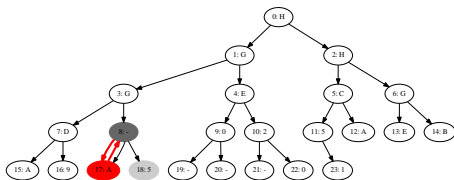Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 23 Array contents: 1GHGECGDA025AEBA9-5---0HIILMMOOPRRRSSSTT
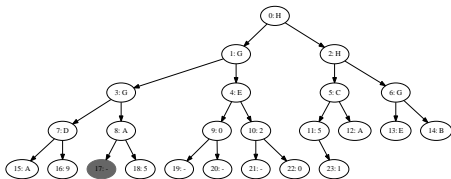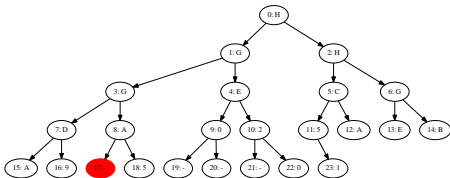
Running heapify on node 2.
Heap size: 23 Array contents: HG1GECGDA025AEBA9-5---0HIILMMOOPRRRSSSTT

Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 23 Array contents: HG1GECGDA025AEBA9-5---0HIILMMOOPRRRSSSTT

Running heapify on node 6.
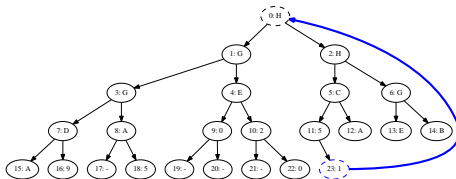Heap size: 23 Array contents: HGGGEC1DA025AEBA9-5---0HIILMMOOPRRRSSSTT

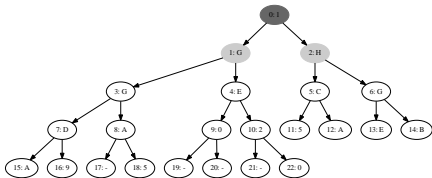Largest of node 6 and its children is node 13.
Root and max will be swapped and heapify will recurse on the new node 13.
Heap size: 23 Array contents: HGGGEC1DA025AEBA9-5---0HIILMMOOPRRRSSSTT

Running heapify on node 13.
Heap size: 23 Array contents: HGGGECEDA025A1BA9-5---0HIILMMOOPRRRSSSTT

Largest of node 13 and its children is node 13.
No swap is necessary, heapify done.
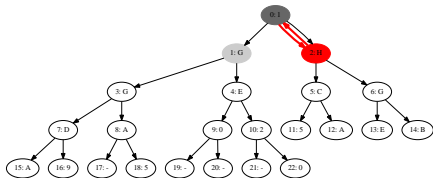Heap size: 23 Array contents: HGGGECEDA025A1BA9-5---0HIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
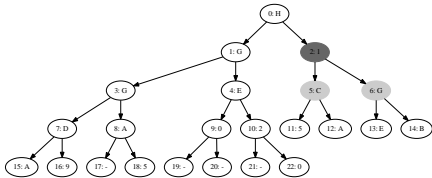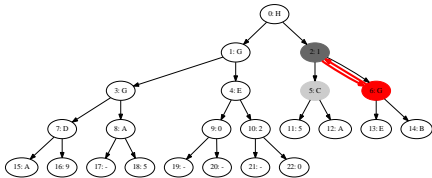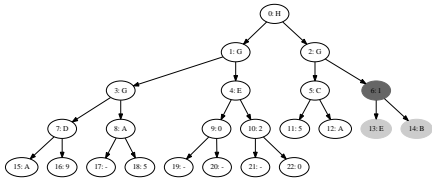Heap size: 23 Array contents: HGGGECEDA025A1BA9-5---0HIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
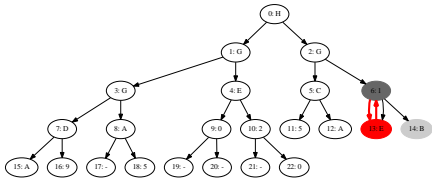Heap size: 22 Array contents: 0GGGiECEDAi025A1BA9.5---HHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
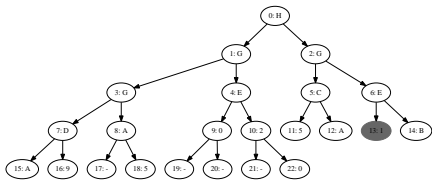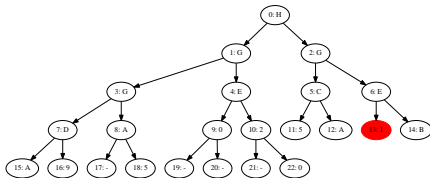Heap size: 22 Array contents: 0GGGECEDA025A1BA9-5---HHIILMMOOPRRRSSSTT

Running heapify on node 1.
Heap size: 22 Array contents: G0GGECEDA025A1BA9-5---HHIILMMOOPRRRSSSTT

Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 22 Array contents: G0GGECEDA025A1BA9-5---HHIILMMOOPRRRSSSTT

Running heapify on node 3.
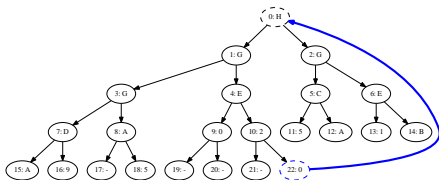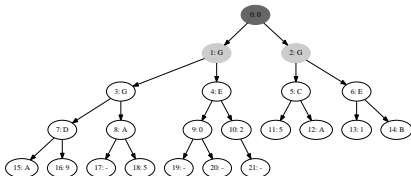Heap size: 22 Array contents: GGG0ECEDA025A1BA9.5---HHIILMMOOPRRRSSSTT

Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 22 Array contents: GGG0ECEDA025A1BA9-5---HHIILMMOOPRRRSSSTT

Running heapify on node 7.
Heap size: 22 Array contents: GGGDECE0A025A1BA9-5---HHIILMMOOPRRRSSSTT
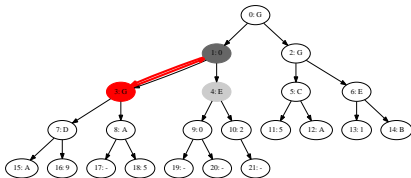
Largest of node 7 and its children is node 15.
Root and max will be swapped and heapify will recurse on the new node 15.
Heap size: 22 Array contents: GGGDECE0A025A1BA9-5---HHIILMMOOPRRRSSSTT
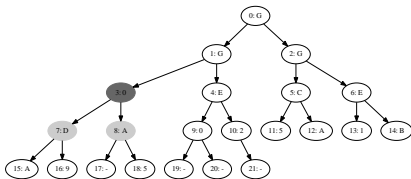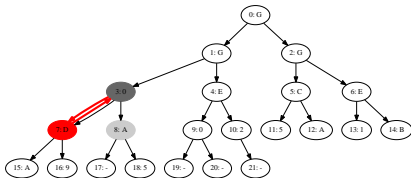
Running heapify on node 15.
Heap size: 22 Array contents: GGGDECEAA025A1B09-5---HHIILMMOOPRRRSSSTT

Largest of node 15 and its children is node 15.
No swap is necessary, heapify done.
Heap size: 22 Array contents: GGGDECEAA025A1B09-5---HHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 22 Array contents: GGGDECEAA025A1B09-5---HHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
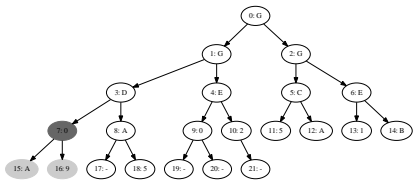Heap size: 21 Array contents: -GGDECEAA025A1B09-5--GHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
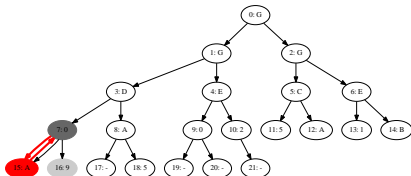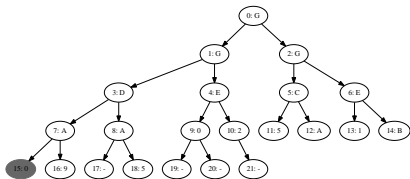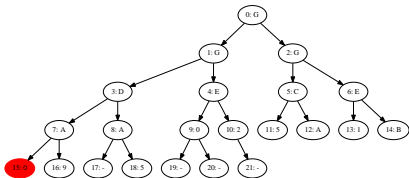Heap size: 21 Array contents: --GGDECEAA025A1B09-5--GHHIILMMOOPRRRSSSTT

Running heapify on node 1.
Heap size: 21 Array contents: G-GDECEAA025A1B09-5--GHHIILMMOOPRRRSSSTT

Largest of node 1 and its children is node 4.
Root and max will be swapped and heapify will recurse on the new node 4.
Heap size: 21 Array contents: G-GDECEAA025A1B09-5--GHHIILMMOOPRRRSSSTT
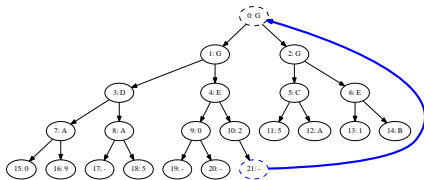
Running heapify on node 4.
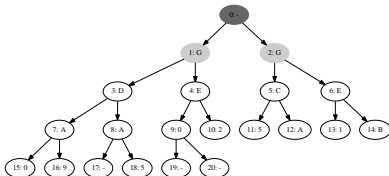Heap size: 21 Array contents: GEGD-CEAA025A1B09-5--GHHIILMMOOPRRRSSSTT

Largest of node 4 and its children is node 10.
Root and max will be swapped and heapify will recurse on the new node 10.
Heap size: 21 Array contents: GEGD-CEAA025A1B09-5--GHHIILMMOOPRRRSSSTT

Running heapify on node 10.
Heap size: 21 Array contents: GIEGD2CEAA0-5A1B09-5--GHHIILMMOOPRRRSSSTT

Largest of node 10 and its children is node 10.
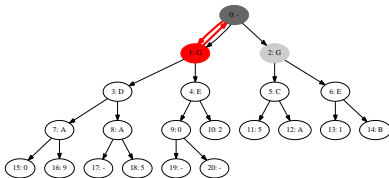No swap is necessary, heapify done.
Heap size: 21 Array contents: GEGD2CEAA0-5A1B09-5--GHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
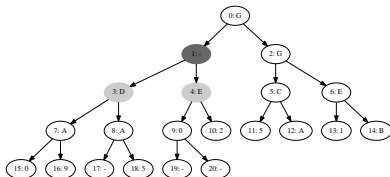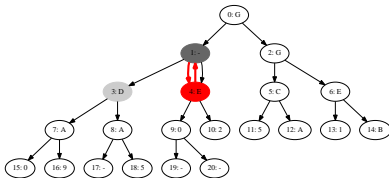Heap size: 21 Array contents: GEGD2CEAA0-5A1B09-5--GHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
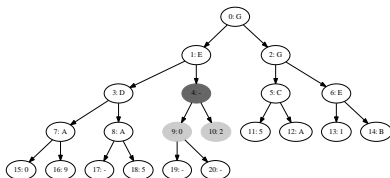Heap size: 20 Array contents: -EGD2CEAA0-5A1B09-5-GGHHIILMMOOPRRRSSSTT
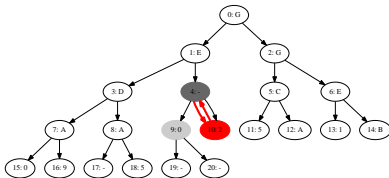
Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 20 Array contents: -EGD2CEAA0-5A1B09-5-GGHHIILMMOOPRRRSSSTT
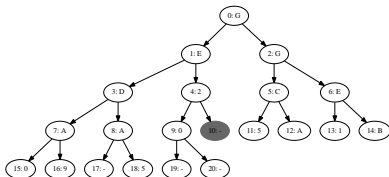
Running heapify on node 2.
Heap size: 20 Array contents: GE-D2CEAA0-5A1B09-5-GGHHIILMMOOPRRRSSSTT

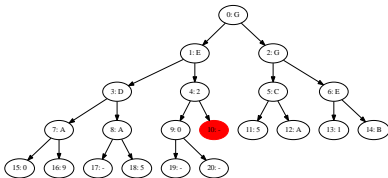Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 20 Array contents: GE-D2CEAA0-5A1B09-5-GGHHIILMMOOPRRRSSSTT

Running heapify on node 6.
Heap size: 20 Array contents: GEED2C-AA0-5A1B09-5-GGHHIILMMOOPRRRSSSTT

Largest of node 6 and its children is node 14.
Root and max will be swapped and heapify will recurse on the new node 14.
Heap size: 20 Array contents: GEED2C-AA0-5A1B09-5-GGHHIILMMOOPRRRSSSTT
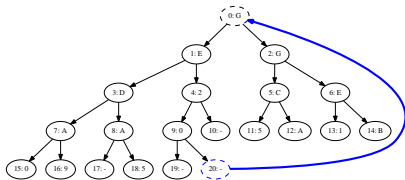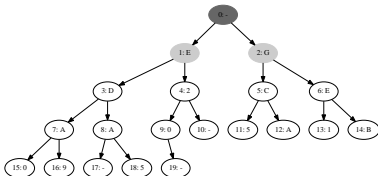
Running heapify on node 14.
Heap size: 20 Array contents: GEED2CBAA0-5A1-09-5-GGHHIILMMOOPRRRSSSTT

Largest of node 14 and its children is node 14.
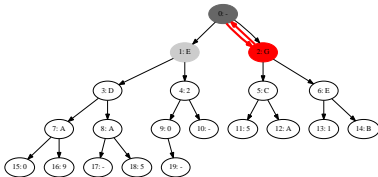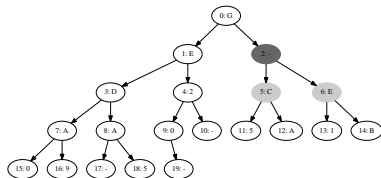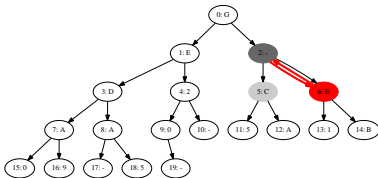No swap is necessary, heapify done.
Heap size: 20 Array contents: GEED2CBAA0-5A1-09-5-GGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 20 Array contents: GEED2CBAA0-5A1-09-5-GGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 19 Array contents: -EED2CBAA0-5A1-09-5GGGHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 19 Array contents: -EED2CBAA0-5A1-09-5GGGHHIILMMOOPRRRSSSTT
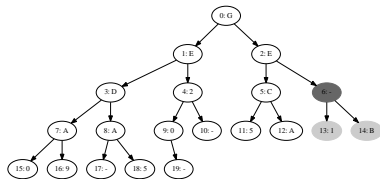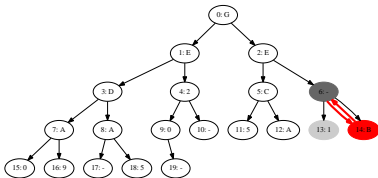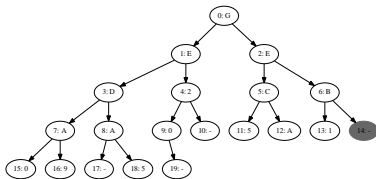
Running heapify on node 1.
Heap size: 19 Array contents: E-ED2CBAA0-5A1-09-5GGGHHIILMMOOPRRRSSSTT
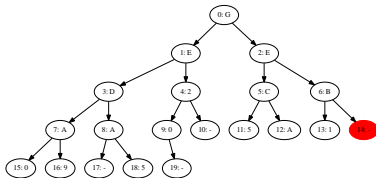
Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 19 Array contents: E-ED2CBAA0-5A1-09-5GGGHHIILMMOOPRRRSSSTT
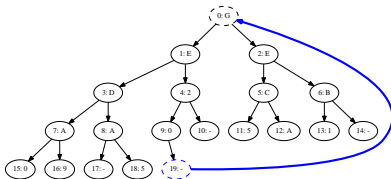
Running heapify on node 3.
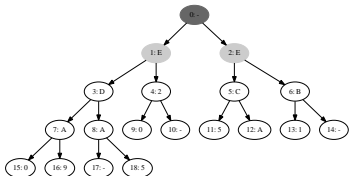Heap size: 19 Array contents: EDE-2CBAA0-5A1-09-5GGGHHIILMMOOPRRRSSSTT

Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 19 Array contents: EDE-2CBAA0-5A1-09-5GGGHHIILMMOOPRRRSSSTT

Running heapify on node 7.
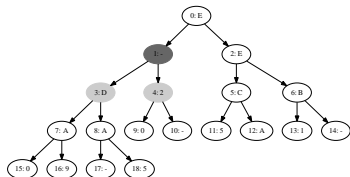Heap size: 19 Array contents: EDEA2CB-A0-5A1-09-5GGGHHIILMMOOPRRRSSSTT
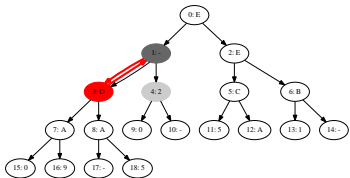
Largest of node 7 and its children is node 16.
Root and max will be swapped and heapify will recurse on the new node 16.
Heap size: 19 Array contents: EDEA2CB-A0-5A1-09-5GGGHHIILMMOOPRRRSSSTT
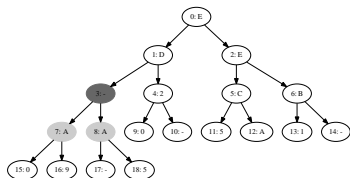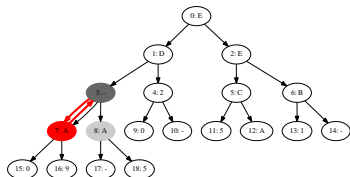
Running heapify on node 16.
Heap size: 19 Array contents: EDEA2CB9A0-5A1-0--5GGGHHIILMMOOPRRRSSSTT

Largest of node 16 and its children is node 16.
No swap is necessary, heapify done.
Heap size: 19 Array contents: EDEA2CB9A0-5A1-0--5GGGHHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 19 Array contents: EDEA2CB9A0-5A1-0--5GGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 18 Array contents: 5DEA2CB9A0-5A1-0--EGGGHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 18 Array contents: 5DEA2CB9A0-5A1-0--EGGGHHIILMMOOPRRRSSSTT
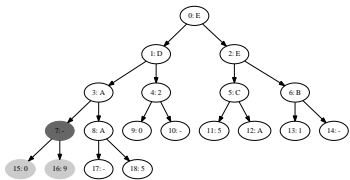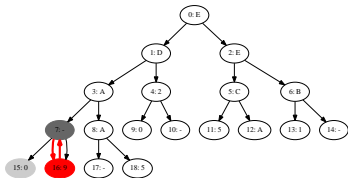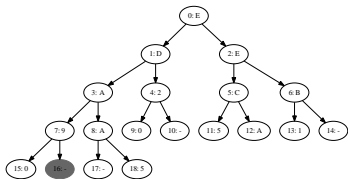
Running heapify on node 2.
Heap size: 18 Array contents: ED5A2CB9A0-5A1-0--EGGGHHIILMMOOPRRRSSSTT

Largest of node 2 and its children is node 5.
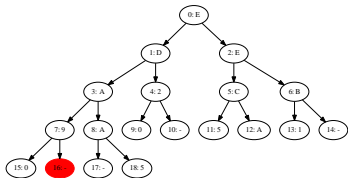Root and max will be swapped and heapify will recurse on the new node 5.
Heap size: 18 Array contents: ED5A2CB9A0-5A1-0--EGGGHHIILMMOOPRRRSSSTT

Running heapify on node 5.
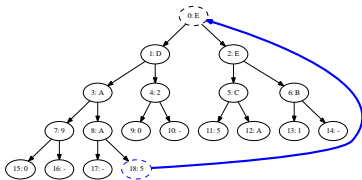Heap size: 18 Array contents: EDCA25B9A0-5A1-0--EGGGHHIILMMOOPRRRSSSTT

Largest of node 5 and its children is node 12.
Root and max will be swapped and heapify will recurse on the new node 12.
Heap size: 18 Array contents: EDCA25B9A0-5A1-0--EGGGHHIILMMOOPRRRSSSTT

Running heapify on node 12.
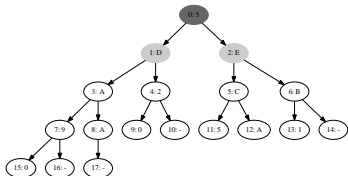Heap size: 18 Array contents: EDCA2AB9A0-551-0--EGGGHHIILMMOOPRRRSSSTT

Largest of node 12 and its children is node 12.
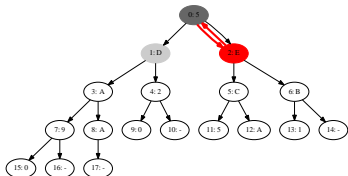No swap is necessary, heapify done.
Heap size: 18 Array contents: EDCA2AB9A0-551-0--EGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
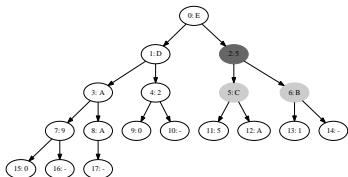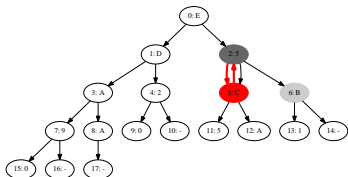Heap size: 18 Array contents: EDCA2AB9A0-551-0--EGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
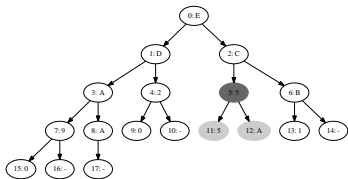Heap size: 17 Array contents: -DCA2AB9A0-551-0-EEGGGHHIILMMOOPRRRSSSTT
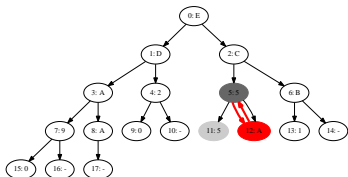
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 17 Array contents: -DCA2AB9A0-551-0-EEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 1.
Heap size: 17 Array contents: D-CA2AB9A0-551-0-EEGGGHHIILMMOOPRRRSSSTT

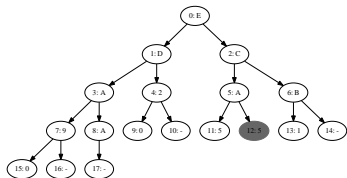Largest of node 1 and its children is node 3.
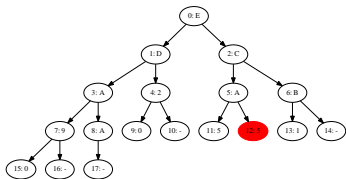Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 17 Array contents: D-CA2AB9A0-551-0-EEGGGHHIILMMOOPRRRSSSTT
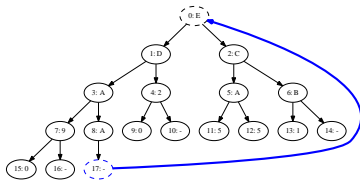
Running heapify on node 3.
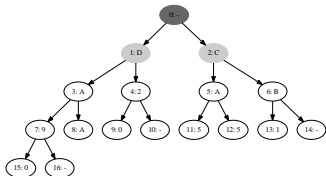Heap size: 17 Array contents: DAC-2AB9A0-551-0-EEGGGHHIILMMOOPRRRSSSTT

0: D

1: A   2: C

3:    4: 2   5: A   6: B

7: 9   8: A   9: 0   10: -   11: 5   12: 5   13: 1   14: -

15: 0   16: -

Largest of node 3 and its children is node 8.
Root and max will be swapped and heapify will recurse on the new node 8.
Heap size: 17 Array contents: DAC-2AB9A0-551-0-EEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 8.
Heap size: 17 Array contents: DACA2AB9-0-551-0-EEGGGHHIILMMOOPRRRSSSTT

Largest of node 8 and its children is node 8.
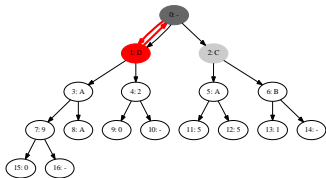No swap is necessary, heapify done.
Heap size: 17 Array contents: DACA2AB9-0-551-0-EEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
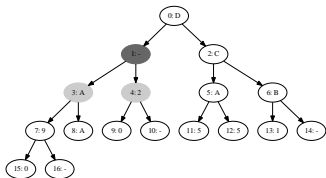Heap size: 17 Array contents: DACA2AB9-0-551-0-EEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 16 Array contents: -ACA2AB9-0-551-0DEEGGGHHIILMMOOPRRRSSSTT

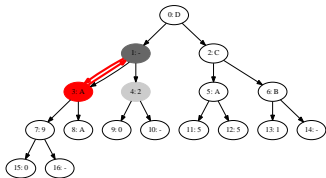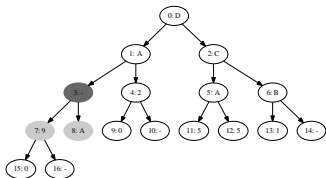Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
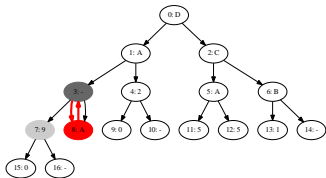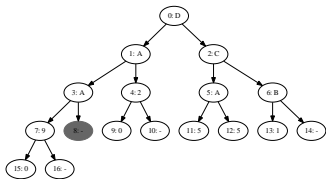Heap size: 16 Array contents: -ACA2AB9-0-551-0DEEGGGHHHIILMMOOPRRRSSSTT

Running heapify on node 2.
Heap size: 16 Array contents: CA-A2AB9-0-551-0DEEGGGHHIILMMOOPRRRSSSTT

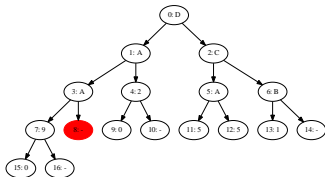Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 16 Array contents: CA-A2AB9-0-551-0DEEGGGHHIILMMOOPRRRSSSTT
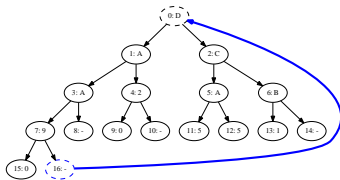
Running heapify on node 6.
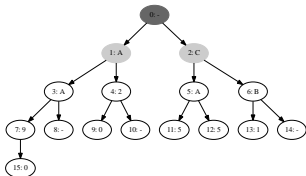Heap size: 16 Array contents: CABA2A-9-0-551-0DEEGGGHHIILMMOOPRRRSSSTT

Largest of node 6 and its children is node 13.
Root and max will be swapped and heapify will recurse on the new node 13.
Heap size: 16 Array contents: CABA2A-9-0-551-0DEEGGGHHHIILMMOOPRRRSSSTT

Running heapify on node 13.
Heap size: 16 Array contents: CABA2A19-0-55--0DEEGGGHHIILMMOOPRRRSSSTT

Largest of node 13 and its children is node 13.
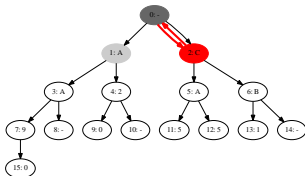No swap is necessary, heapify done.
Heap size: 16 Array contents: CABA2A19-0-55--0DEEGGGHHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
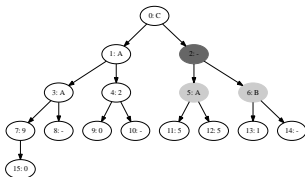Heap size: 16 Array contents: CABA2A19-0-55--0DEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 15 Array contents: 0ABA2A19-0-55--CDEEGGGHHIILMMOOPRRRSSSTT

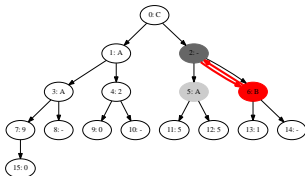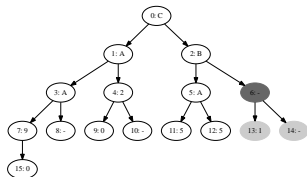Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
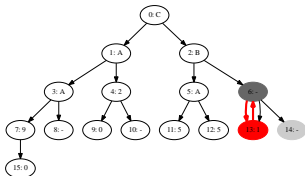Heap size: 15 Array contents: 0ABA2A19-0-55--CDEEGGGHHIILMMOOPRRRSSSTT
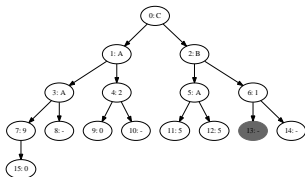
Running heapify on node 2.
Heap size: 15 Array contents: BA0A2A19-0-55--CDEEGGGiHHIILMMOOPRRRSSSTT

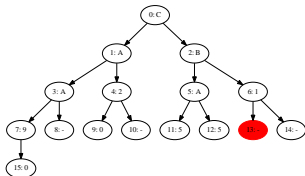Largest of node 2 and its children is node 5.
Root and max will be swapped and heapify will recurse on the new node 5.
Heap size: 15 Array contents: BADA2A19-0-55--CDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 5.
Heap size: 15 Array contents: BAAA2019-0-55--CDEEGGGiHHiILMMOOPRRRSSSTT

Largest of node 5 and its children is node 11.
Root and max will be swapped and heapify will recurse on the new node 11.
Heap size: 15 Array contents: BAAA2019-0-55--CDEEGGGHHIILMMOOPRRRSSSTT
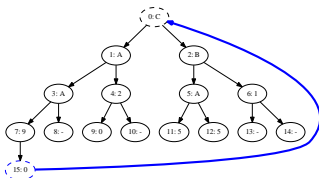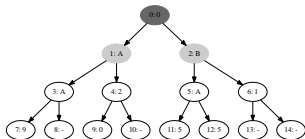
Running heapify on node 11.
Heap size: 15 Array contents: BAAA2519-0-05--CDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 11 and its children is node 11.
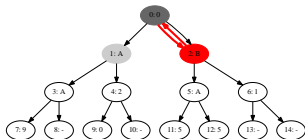No swap is necessary, heapify done.
Heap size: 15 Array contents: BAAA2519-0-05--CDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
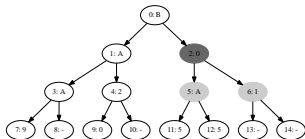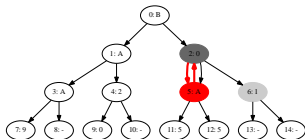Heap size: 15 Array contents: BAAA2519-0-05--CDEEGGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
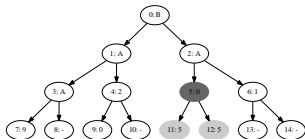Heap size: 14 Array contents: -AAA2519-0-05-BCDEEGGGHHIILMMOOPRRRSSSTT
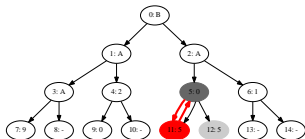
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 14 Array contents: -AAA2519-0-05-BCDEEGGGHHIILMMOOPRRRSSSTT
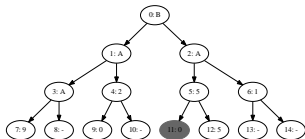
Running heapify on node 1.
Heap size: 14 Array contents: A-AA2519-0-05-BCDEEGGGHHIILMMOOPRRRSSSTT

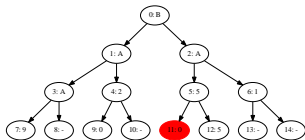Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 14 Array contents: A-AA2519-0-05-BCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 3.
Heap size: 14 Array contents: AAA-2519-0-05-BCDEEGGGGHHIILMMOOPRRRSSSTT

Largest of node 3 and its children is node 7.
Root and max will be swapped and heapify will recurse on the new node 7.
Heap size: 14 Array contents: AAA-2519-0-05-BCDEEGGGHHIILMMOOPRRRSSSTT
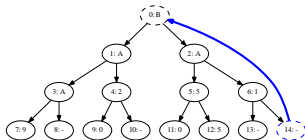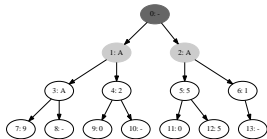
Running heapify on node 7.
Heap size: 14 Array contents: AAA9251--0-05-BCDEEGGGGHHIILMMOOPRRRSSSTT

Largest of node 7 and its children is node 7.
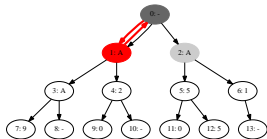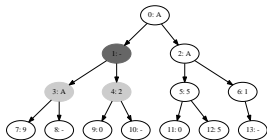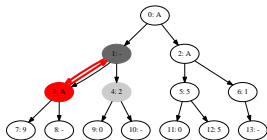No swap is necessary, heapify done.
Heap size: 14 Array contents: AAA9251--0-05-BCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 14 Array contents: AAA9251--0-05-BCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
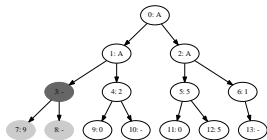Heap size: 13 Array contents: -AA9251--0-05ABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 13 Array contents: -AA9251--0-05ABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 1.
Heap size: 13 Array contents: A-A9251--0-05ABCDEEGGGHHIILMMOOPRRRSSSTT

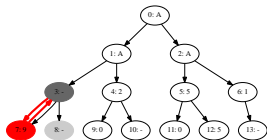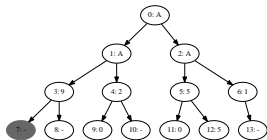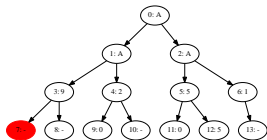Largest of node 1 and its children is node 3.
Root and max will be swapped and heapify will recurse on the new node 3.
Heap size: 13 Array contents: A-A9251--0-05ABCDEEGGGHHIILMMOOPRRRSSSTT
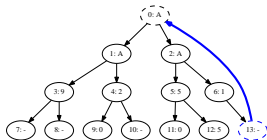
Running heapify on node 3.
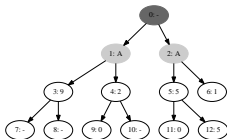Heap size: 13 Array contents: A9A-251--0-05ABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 3 and its children is node 3.
No swap is necessary, heapify done.
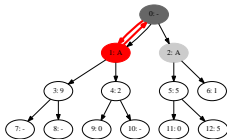Heap size: 13 Array contents: A9A-251--0-05ABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 13 Array contents: A9A-251--0-05ABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
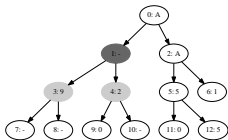Heap size: 12 Array contents: 59A-251--0-0AABCDEEGGGHHIILMMOOPRRRSSSTT
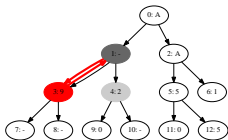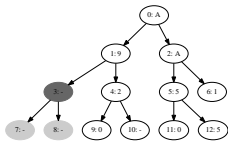
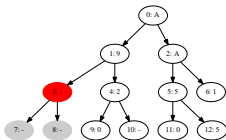Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 12 Array contents: 59A-251--0-0AABCDEEGGGHHIILMMOOPRRRSSSTT
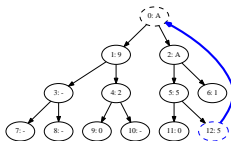
Running heapify on node 2.
Heap size: 12 Array contents: A95-251--0-0AABCDEEGGGHHIILMMOOPRRRSSSTT
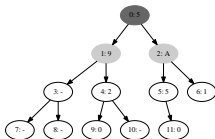
Largest of node 2 and its children is node 2.
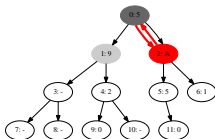No swap is necessary, heapify done.
Heap size: 12 Array contents: A95-251--0-0AABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 12 Array contents: A95-251--0-0AABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
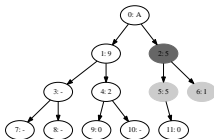Heap size: 11 Array contents: 095-251--0-AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 11 Array contents: 095-251--0-AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 1.
Heap size: 11 Array contents: 905-251--0-AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 1 and its children is node 4.
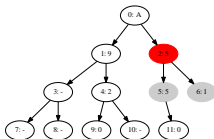Root and max will be swapped and heapify will recurse on the new node 4.
Heap size: 11 Array contents: 905 -251 -0-AAABCDEEGGGHHIILMMOOPRRRSSSTT
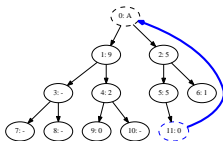
Running heapify on node 4.
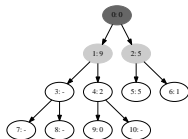Heap size: 11 Array contents: 925-051--0-AAABCDEEGGGGHHIILMMOOPRRRSSSTT

Largest of node 4 and its children is node 4.
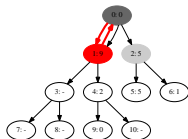No swap is necessary, heapify done.
Heap size: 11 Array contents: 925-051--0-AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
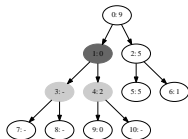Heap size: 11 Array contents: 925-051--0-AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 10 Array contents: -25-051--09AAABCDEEGGGGHHIILMMOOPRRRSSSTT
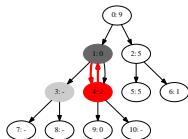
Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 10 Array contents: -25-051--09AAABCDEEGGGHHIILMMOOPRRRSSSTT
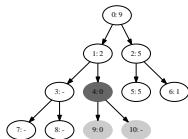
Running heapify on node 2.
Heap size: 10 Array contents: 52--051--09AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 2 and its children is node 5.
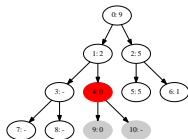Root and max will be swapped and heapify will recurse on the new node 5.
Heap size: 10 Array contents: 52--051--09AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 5.
Heap size: 10 Array contents: 525-0-1--09AAABCDEEGGGHHIILMMOOPRRRSSSTT

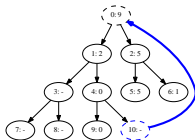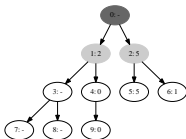Largest of node 5 and its children is node 5.
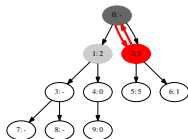No swap is necessary, heapify done.
Heap size: 10 Array contents: 525-0-1--09AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
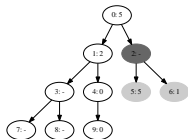Heap size: 10 Array contents: 525-0-1--09AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 9 Array contents: 025-0-1--59AAABCDEEGGGHHIILMMOOPRRRSSSTT
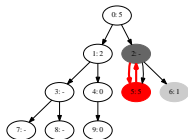
Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 9 Array contents: 025-0-1--59AAABCDEEGGGHHIILMMOOPRRRSSSTT
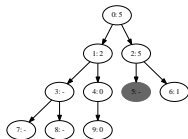
Running heapify on node 2.
Heap size: 9 Array contents: 520-0-1--59AAABCDEEGGGHHIILMMOOPRRRSSSTT

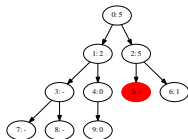Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 9 Array contents: 520-0-1--59AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 6.
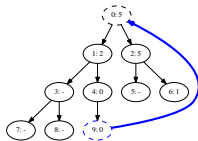Heap size: 9 Array contents: 521-0-0--59AAABCDEEGGGHHIILMMOOPRRRSSSTT

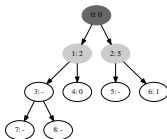Largest of node 6 and its children is node 6.
No swap is necessary, heapify done.
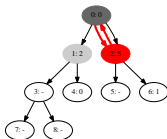Heap size: 9 Array contents: 521-0-0--59AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
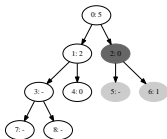Heap size: 9 Array contents: 521-0-0--59AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 8 Array contents: -21-0-0-559AAABCDEEGGGHHIILMMOOPRRRSSSTT
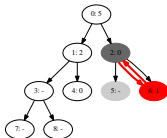
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 8 Array contents: -21-0-0-559AAABCDEEGGGHHIILMMOOPRRRSSSTT
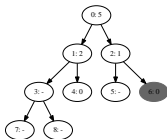
Running heapify on node 1.
Heap size: 8 Array contents: 2-1-0-0-559AAABCDEEGGGHHIILMMOOPRRRSSSTT

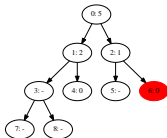Largest of node 1 and its children is node 4.
Root and max will be swapped and heapify will recurse on the new node 4.
Heap size: 8 Array contents: 2-1-0-0-559AAABCDEEGGGHHIILMMOOPRRRSSSTT
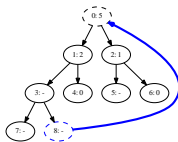
Running heapify on node 4.
Heap size: 8 Array contents: 201—0-559AAABCDEEGGGHHIILMMOOPRRRSSSTT

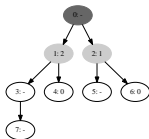Largest of node 4 and its children is node 4.
No swap is necessary, heapify done.
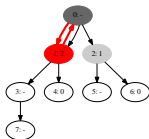Heap size: 8 Array contents: 201—0:559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
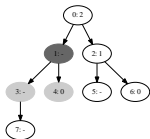Heap size: 8 Array contents: 20↑—0·59AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 7 Array contents: -01--02559AAABCDEEGGGHHIILMMOOPRRRSSSTT
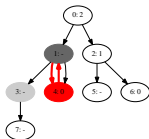
Largest of node 0 and its children is node 2.
Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 7 Array contents: -01---02559AAABCDEEGGGHHIILMMOOPRRRSSSTT
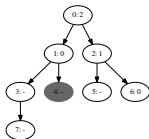
Running heapify on node 2.
Heap size: 7 Array contents: 10----02559AAABCDEEGGGHHIILMMOOPRRRSSSTT
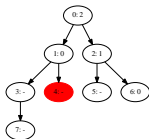
Largest of node 2 and its children is node 6.
Root and max will be swapped and heapify will recurse on the new node 6.
Heap size: 7 Array contents: 10----02559AAABCDEEGGGHHIILMMOOPRRRRSSSTT
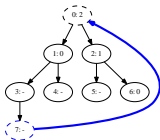
Running heapify on node 6.
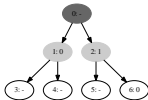Heap size: 7 Array contents: 100----2559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 6 and its children is node 6.
No swap is necessary, heapify done.
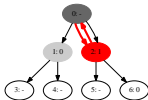Heap size: 7 Array contents: 100----2559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 7 Array contents: 100—2559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 6 Array contents: -00---12559AAABCDEEGGGHHIILMMOOPRRRSSSTT
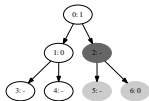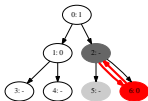
Largest of node 0 and its children is node 1.
Root and max will be swapped and heapify will recurse on the new node 1.
Heap size: 6 Array contents: -00---12559AAABCDEEGGGHHIILMMOOPRRRSSSTT
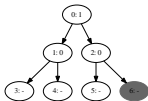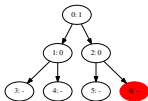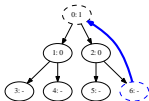
Running heapify on node 1.
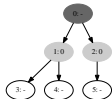Heap size: 6 Array contents: 0-0--12559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 1 and its children is node 1.
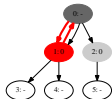No swap is necessary, heapify done.
Heap size: 6 Array contents: 0-0---12559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 6 Array contents: 0-0---12559AAABCDEEGGGHHIILMMOOPRRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 5 Array contents: --0--012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

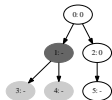Largest of node 0 and its children is node 2.
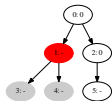Root and max will be swapped and heapify will recurse on the new node 2.
Heap size: 5 Array contents: --0--012559AAABCDEEGGGHHIILMMOOPRRRSSSTT
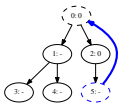
Running heapify on node 2.
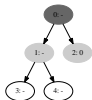Heap size: 5 Array contents: 0—012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 2 and its children is node 2.
No swap is necessary, heapify done.
Heap size: 5 Array contents: 0----012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 5 Array contents: 0—012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 4 Array contents: ----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 0.
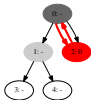No swap is necessary, heapify done.
Heap size: 4 Array contents: -----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
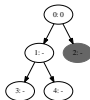Heap size: 4 Array contents: -----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 3 Array contents: ----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT
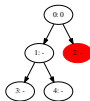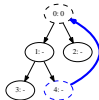
Largest of node 0 and its children is node 0.
No swap is necessary, heapify done.
Heap size: 3 Array contents: -----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
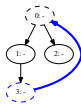Heap size: 3 Array contents: ----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.
Heap size: 2 Array contents: ----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 0.
No swap is necessary, heapify done.
Heap size: 2 Array contents: -----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Removing root and moving it outside of the heap.
The last element takes its place and the heap size is decremented.
Heap size: 2 Array contents: -—0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Running heapify on node 0 as part of the repair heap (heap-down) process.

Heap size: 1 Array contents: ----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Largest of node 0 and its children is node 0.
No swap is necessary, heapify done.
Heap size: 1 Array contents: ----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT

Heap empty, sorting complete.
Heap size: 0 Array contents: ----0012559AAABCDEEGGGHHIILMMOOPRRRSSSTT