

2007 Paper 13 Question 6

Compiler Construction

- (a) Garbage Collection.
- (i) Explain how it is possible to “leak memory” using a reference counting garbage collector. [3 marks]
 - (ii) Describe any technique that might be used to address this problem. [3 marks]
- (b) Explain in detail how we might translate code generated for a stack-only machine (such as the JVM) to a register-based machine (such as ARM). [6 marks]
- (c) Describe in detail how static and dynamic methods are compiled differently for object-oriented languages with single inheritance. [8 marks]