

Metaprogramming: 2019 project guidelines

Picking a topic

First task: pick a topic for your project and email your choice to jeremy.yallop@cl.cam.ac.uk by Sat 1 Dec 2018.

The `projects` directory in the repository (github.com/namin/metaprogramming) lists a number of project ideas. For example,

An embedded DSL for music

For example, you might build something along the lines of Szamozvancev and Gale's EDSL described in *Well-typed music does not sound wrong (Haskell 2017)*, but using non-classical (e.g. Jazz) harmony rules.

Alternatively, you may propose your own topic, so long as it is closely related to the content of the course. Acceptable project proposals are likely to involve some kind of embedded DSL. If you are in doubt whether a topic is appropriate, it is advisable to check with the lecturers before 1 December.

Projects are also expected to focus on one or more of the following **themes**:

- optimization
- types / checking properties / verification
- multiple interpretations of a single language

Submission

Second task: submit your completed project by noon on Tue 14 Jan 2019

Your submission should consist of

1. A piece of software, written in any language(s), implementing your chosen topic
2. A PDF document of 2000–3000 words describing your design and implementation

You should include at least one example that demonstrates important aspects of your design, and instructions on how to run your code.

If you are building on earlier work (for example, a Part II project), your write-up must clearly indicate what is new.

Additional material may be included as clearly-indicated appendices, but these will not be marked.