

COMS 4115: Programming Languages and Translators

Project Deliverable #1: The Proposal

Due February 2nd, 2018 at 11:59:00 PM
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1 Background

This deliverable will serve as a starting point for your group's semester-long project: the design and implementation of a small programming language. Think about either a small application domain (e.g., music notation, graph/string processing, game design) or some interesting programming features that you'd like to implement (e.g., objects, polymorphism, arrays, pointers), and describe clearly how you envision reaching that target. We're looking for "building block" languages: aim for a small number of features that can be combined into a rich collection of programs.

This proposal should focus on the important ideas and features comprising your language, not the specific details. For example, there's no need to explain how typical operators work (arithmetic, conditional, boolean) unless you're using them in an interesting way. Instead, discuss things like what types and data structures you plan to support, the programming paradigms that describe your language (e.g., object-oriented, functional, declarative), and any interesting language features you plan to implement (e.g., polymorphism, first-class functions, pointers).

2 Content Requirements

Your proposal should include the following:

1. The name of your language (this will be used to identify your group)
2. The names and email addresses of each group member
3. A description of your language: what features will it have? What kind of algorithms is it meant to describe?
4. A substantial, representative code example, with comments and/or surrounding prose explaining its purpose and the interesting features it uses.

Depending on your language, you may also include discussions on the scope of your language (is it meant to be used in a specific domain?) and any necessary background information (e.g., a physics simulation language should briefly describe any physics concepts that a layperson may not understand).

3 Grading

To be graded, your submission must follow all the rules and regulations listed below in Section 4. We will use the detailed grading rubric provided on the CourseWorks assignment page for grading; here, we list the general criteria, total points allocated to each, and a description of how to successfully achieve full marks.

Note that you will not be graded or judged on the specific ideas you present, but instead on how well you articulate and support those ideas.

Criteria	Total	Description
Content	60 pts	Document clearly proposes a potential language, describes its most salient features and provides a well-documented code example of a representative program
Organization	20 pts	Document is well-organized; code and prose are clearly distinguished
Writing	20 pts	Document has been proof-read, checking for spelling and grammar errors

4 Rules and Regulations

- Submissions must be made via CourseWorks
- Each group should submit a single .pdf file
- All group members' names and email addresses should be included in the document