

Milestone 1—Language Research

One of the learning outcomes for Programming Language Paradigms is that you will be able to develop medium-sized applications in a new programming language through independent study. To help you achieve this goal, I'll be asking you to complete weekly project milestones. Most of these milestones will be completed as a team, but this first milestone is to be *individual effort*.

OBJECTIVES

The objectives of this milestone are two-fold. The first objective is for you to develop an appreciation for the broad variety of programming languages that you might use for your term project. The second objective is for you to help me collect enough information to form project teams with common interests.

REQUIREMENTS

You have two tasks for this milestone:

1. Write a short (2 to 3 page) essay identifying three potential programming languages for your term project. Lately I've been interested in Clojure, Hadoop+Pig, Groovy, and Objective-C, but feel free to research whatever languages are interesting to you.
 - Give a short description of each language in your own words, *including appropriate citations*.
 - In your description, indicate what programming paradigm or paradigms the language supports, and discuss what application domains the language is used for.
 - Give a small snippet of interesting code in each language. Describe why the snippet is interesting. Here's an example of such a snippet from Scheme:

```
(map (lambda (x) (* 2 x)) '(1 2 3))
```

This snippet highlights Scheme's prefix notation, first-class functions, and crazy syntax.
 - You should also identify a few of the claimed strengths and weaknesses of the language. (At this stage, I do not expect you to confirm these strengths and weaknesses. Rather, I'm looking for you to sample the opinion of the on-line community around the language.)
 - Conclude your essay by ranking the languages in order of your preference for implementing your term project. Explain your rationale.
 - See the posted rubric for more information.
2. Complete the team preference form posted on ANGEL.

SUBMISSION

Submit your essay *by email* to me (clifton@rose-hulman.edu) *as a PDF file*. No other formats will be accepted. (I'm looking at you, Word.)

DUE DATE

The milestone due date is indicated on the class schedule posted on-line.