Project CP 3 – CS 536: Programming Language Design
Instructor: Rose Bohrer (pronouns: she/her)
Time: T,Th | 4:00 PM – 5:20 PM
Classroom: Higgins Labs 114
Instructor Office: Fuller Labs 139

Overview

This course is an ungraded, project-based, team-based course. This means that you identify a team, design your own project together, and assign yourself a grade based on how well your project meets the course goals. In understanding the role of assignments, we should distinguish "structure" from "requirements." If you already know how you want to run your project or what you want to do, you should do so – be as radical as you like. You choose how to engage with this structure, but these homeworks provide you a structure so that you have lots of guidance as your starting point.

When I review your submissions, I **only** provide formative feedback, never a grade. You are the person who assigns your final grade, you are in control.

Goal

Iterate on your language design. Describe your language's design and its goals with greater detail. Continue implementation work.

Logistics

Teams are at least 3 people. There is no upper limit on size. It is recommended to keep the same team all semester. Checkpoints are due at the times indicated on the Schedule section of the syllabus.

As a group, fill out the form on the following pages and submit it. Submit all files for your (work-in-progress) project and submit (the beginnings of) your project report. Submit one copy for your whole group. Many students save their copies of the individual forms, to help with end-of-term self-evaluations.

Task Instructions

- Before the meeting:
  - Do the work you said you would do
  - Fill out the pre-meeting form
- At the meeting:
  - Follow the meeting form
  - Take notes
  - Review exercises
  - Review project progress
  - Help each other with both of those things
  - Review the status of your project files. Do your best to have it “presentable” for feedback. I.e., does it compile and run, and can I do that easily?
  - Read the handout to see what is planned next week.
  - Decide what work each person will do over the next week.
  - Submit your work on Canvas (one person, on behalf of group)
    - Make sure you submit your project files
    - Make sure to submit your writeup draft

Before-Meeting Mid-term Self-Reflection

Fill out this form to reflect on your progress throughout the term. Fill it out before your team meeting, then discuss everyone's forms at the meeting to reach an agreement where you're at and where to go.

Part 1: Self-assessment

Describe your current knowledge level for each course objective. Use words, numbers, or letters.
Objectives:

1. Identify a clear problem where programming language design can be used

   _____

2. Communicate with clarity and technical depth about language design

   _____

3. Develop a mathematically-precise definition of your language's syntax

   _____

4. Work effectively with your team to plan your project

   _____

5. Implement a well-scoped prototype in the language of your choice

   _____

6. Situate your project among the schools of thought discussed in class

   _____

Based on how you described NR, C, B, and A work on CP0, self-assess your progress. How would you grade yourself in different objectives and why? The goal is growth, not 100% complete knowledge.

_____

_____

_____

_____

If your goals have changed, describe how they have changed. Otherwise, leave blank:

_____

_____

_____

If you have not done this already, make sure to reflect on positive things you have done this term. If you can't think of any, think of a small one:

_____

_____

Think about what you'd like to do in the second half of the semester. What should you keep doing? What should you start or stop doing?

_____

_____

Before-Meeting Work

Fill this out to prepare for your meeting

1. **Write your answers to these lecture exercises.**
   Brainstorm a small user study to conduct on your teammates/classmates.

   What do you wish to learn about your language?

   _____

   What kind of methods are best for that? Quantitative, qualitative? If qualitative, are you thinking: survey, interviews, focus groups, observing the subject performing specific tasks?

   _____

   Briefly describe what the study could look like.

   _____

2. **Any questions about the exercises you want to discuss with teammates?:**

   _____

3. **At the last meeting, what project work did you assign yourself?:**

   _____

   _____

4. **What went well in your own work? If you feel off track, what can the team do to get on track?:**

   _____

5. **As a whole, is the team on? If not, what can you do to get on track?**

   _____

6. **If there's anything course staff could do to help my team, bring that up in the team meeting:**

Student Structured Meeting Form

Meet with all your teammates, follow the meeting instructions, and fill out the form.

7. **Discuss the lecture exercises + answers with each other. Write notes from your discussion here. Any sources of confusion? Were they resolved? Any questions you'd like to ask course staff?:**

   _____

   _____

8. **Fill out (e.g. during the meeting) a combined copy of the previous page, which summarizes your lecture exercise answers and progress, as a team overall.**

9. **Update your report draft following your meeting discussions, and submit them with the CP:**

   _____

10. **Discuss what each team member planned to do, what they did well, and where they need help:**

    _____

    _____

11. **Now help them, and/or get help from course staff.**
12. **I want to support you. A great way to do this is if you proactively ask me questions and share comments/concerns with us on each checkin, at least once per checkpoint, so I can give you answers in feedback. Put questions/comments here.**

    _____

    _____

13. **What do you (each) plan to do on your project in the next week?**

    _____

    END OF FORM

Instructor Feedback Rubric

I will use this rubric for giving feedback:

- What questions and concerns can I answer for the students?
- Was the work detailed enough that I felt I could provide good feedback? If not, your main feedback will be to increase the level of detail
- I read the answers to the lecture exercises. What mastery was demonstrated? What areas should they review, if any?
- Did they help each other understand the lecture exercises?
- Are they working well together?
- Did they say what each individual team member will do in the next week?
- I will give feedback on core course skills:
    - Did you correctly use regular expressions and context-free grammars to define your language?
    - Did you submit a program that compiles and runs and works on >=1 tiny example?
    - If not, did you document your problems and show me your plan going forward?
    - How has your implementation matured since last time? E.g., bug fixes, new features, better examples or documentation.
    - I will highlight students' strengths and progress on the above points.