Project CP 1 – 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 the checkpoints provide you a structure so that you have lots of guidance.

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

Design your language on a conceptual level. You will identify what kinds of features are present, how they interact, and what goal you wish to achieve.

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 via Canvas by the deadline. Submit one copy for your whole group. Many students save their copies of the individual ones, to help with end-of-term self-evaluations.

Task Instructions

- Before **or** at the meeting:
    - Decide how you will share your files as you work on the project.
    - Actually set that up
    - Make sure everyone is able to use it
    - Put a blank project in, and make sure everyone can open it
- Before the meeting:
    - Fill out the first page of the form, which asks for exercises from lecture
    - Read the modeling examples from the lecture notes
    - Brainstorm ideas for the meeting
- At the meeting:
    - Review your exercise answers as a group
    - Help each other learn any confusing parts
    - Write your group answers on the form you will submit
    - Fill out the modeling section of the form.
    - Read the handout to see what is expected next week.
    - Decide what work each person will do over the next week.
    - Submit your work on Canvas (one person, on behalf of group)

Before-Meeting Form

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

1. **Write your answers to these exercises:**
    a. **[L3] Write the names of some PLs. Then discuss: which of these languages do you consider using in your project, why, and what weaknesses come with that choice?**

    _____

    _____

    b. **[L3] We discussed these schools of thought: "Type Theory, Software Engineering, Social Science, Critical Studies, Lay Practitioner". Which schools of thought are most likely to influence your project, and how? Any school of thought that you're specifically** not **interested in?**

    _____

    _____

    c. **[L4] – Make yourself a review sheet that defines the following:**
        i. **Value, Expression, Statement, Definition**
        ii. **- Syntax, Semantics and compares/contrasts:**
        iii. **- Mutable vs. Immutable data**
        iv. **- Static typing vs. dynamic typing**
        v. **- How type theorists vs. practitioners talk about types**
    d. **[general] How's Scala going, if applicable?**

    _____

    _____

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

    _____

3. **Brainstorm each of the following:**

    What's the goal of your project?: _____

    What's does success mean to you?: _____

    What features does your project have?: _____

    What paradigms, if any, does your project match up with?:

    _____

Any lecture topics on the course schedule that would especially help?:

_____

4. **Any concerns about this topic choice, to discuss at meeting?:**

_____

Student Structured Meeting Form

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

5. **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 us now?:**

   _____

   _____

6. **Fill out (e.g. during the meeting) a combined copy of the previous page, which summarizes your final answers and final brainstorm, as a team overall.**

7. **Decide on a project topic.**

   Topic:_____

8. **Take meeting notes. Write them here:**

   _____

   _____

9. **(long)Describe the syntax for your language. Informal and/or examples are OK:**

   _____

   _____

   (long)Plan out how your team will implement the first prototype in the next checkpoint.

   _____

10. **I want to support you. A great way to do this is if you proactively ask me questions and share comments/concerns with me on each checkin, at least once per checkpoint, so I can give you answers in our feedback. Put questions/comments here.**

    _____

    _____

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

    _____

    _____

    END OF FORM

Rubric for Feedback from Course Staff

I will use this rubric to write feedback. I will not write grades. It is important to read the feedback and discuss it with your teammates.

1. What questions and concerns can I answer for the students?
2. How well did the team take notes? If the notes do not contain enough detail for you to give good feedback, your main feedback will be “your notes need to be more detailed”. I expect that student submissions will be longer than the original form, i.e., students will type their answers, which could be longer than the blanks.
3. How clearly have you defined your project goals?
4. How many features and work tasks did the team identify? Did they identify enough to make a complete project, but few enough that it’s a realistic amount of work?
5. How thorough and actionable is your plan for how to make a prototype of your language?
6. How well are the students working together? Are they helping each other?
7. How challenging are students finding syntax and notation? It is expected to struggle with it in the beginning, because I am only starting to teach syntax. How can I help you solidify your understanding?
8. Did the students say which each student specifically will do during the next week (not just the group as a whole?) Do I feel like their plan is concrete enough that they can work together effectively? Anything I can do to help the team dynamic?