**PROJECT – Overview and Work Plan**

**Project Overview**

Your course project, to be done in **teams**, will allow you to experience several phases of designing a simple programming language (SPL) and its translator. Specifically, you will carry do the following:

1. Design a programming language to perform a limited task. While the task is limited, which will place constraints on the types of things you need to think about, it will contain some important elements of modern programming languages.
2. Implement a lexical analyzer for your SPL.
3. Implement a syntactic analyzer (parser) for your SPL.
4. Implement some aspects of the static semantics phase in PL analysis and generate code for a virtual machine that uses an assembly-like language (which I will provide).
5. Submit a report that covers all steps.

This document sets out a timeline for the different phases and makes a few remarks about teamwork. Separate documents will be used to specify each successive phase.

**Project Teams**

The very first thing you need to do is to organize yourselves into teams. Do that [here](https://alakhawayn365.sharepoint.com/:x:/s/FA21SSECSC331501/ETwUOtcSkclNspVCizQwxyABgPHKbII2JutNbd85KwsRfw?e=PxRgPe). This is a link to the document “Project Teams” that you will find in the Files Tab under Project in Teams.

Things to keep in mind:

1. The teams should be created so as to maximize chances of survival through the project. Note that your best friend is not necessarily your best teammate, and your friendship may suffer. Choose your teammates wisely.
2. Your schedules and your personalities should allow for working together. You should not assume that the way you get through this project is by dividing up the work, working on it and then hastily pulling it together right before the delivery is due is not the way to go. Before choosing a team, make sure you have compatible schedules and working styles.
3. Each of you will rotate through the role of Team captain, which will give you the extra responsibility of **(a)** making sure the team does work together and that everybody contributes sufficiently, and **(b)** submitting the deliverable that is currently due together with a very brief report of how things worked. Talk to me if you are having trouble with your teammates before the team falls apart.

Teams should start out with 3 members. If someone drops the class, it may become a team of two. If a team falls completely apart, then some its members may be redistributed. Hopefully it won’t happen.

**Project Deliverables**

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| --- | --- | --- | --- | --- | --- |
| **Deliverable** | **Content** | **Due Date** | **Due Time** | **Course Grade %** | **Handout with Details** |
| Deliverable 0 | Form your teams. | Sunday, Oct 31 | 11:55 PM | 0 | Project-Overview |
| Deliverable 1 | Design the PL | Sunday, Nov 5 | 1:00 PM | 2 | Project-Part1 |
| Deliverable 2 | Implement the Lexer | Tuesday, Nov16 | 9:00 AM | 3 | Project-Part2 |
| Deliverable 3 | Implement the Parser | Friday, Nov 26 | 11:55 PM | 4 | Project-Part3 |
| Deliverable 4 | Generate Code | Thursday, Dec 9 | 11:55 PM | 4 | Project-Part4 |
| Deliverable 5 | Submit Final Report and final changes | Tuesday, Dec 14 | 11:55 PM | 2 | Project-Part5 |
|  |  |  |  | 15 |  |