

## CSc 372 Project 1

### Fall 2023

**Part 1 Deadline:** Monday 18 September 2023 by 11:59 PM

**Part 2 Deadline:** Monday 25 September 2023 by 11:59 PM

**Part 3 Deadline:** Monday 2 October 2023 by 11:59 PM

**Final Deadline:** Monday 9 October 2023 by 11:59 PM

**Part 4 Deadline:** Monday 23 October 2023 by 11:59 PM

**Late Submission Policy.** Each part of the project can be submitted up to 3 days late and will not be accepted after that. Each day late will result in a 10 point deduction from your final project grade. However, those deductions can be made up by turning in another part of the project early. Note that this policy does not apply to the Feedback, which is individual and graded separately from the rest of the project.

### Project Overview.

In this project, you have the opportunity to learn a new programming language. You are strongly encouraged to work with a partner or in a group of 3, but working individually is allowed. Note that the size and complexity of your project will depend on the size of your group.

### Part 1.

#### Group Members and Language Choice (5 points)

You must choose a language that is new to everyone in your group and that is not covered in this class. This means that Java, Python, C, ML, Prolog, and Forth are not allowed. I will also limit language choice so that we get a good variety, so no more than 6 groups will be allowed to work on the same language. I will approve language choices on a first come-first serve basis, so it is a good idea to have several options when you submit. The first thing you need to submit for Part 1 is your group members and language choice. In order to give everyone a couple days to find group members and decide on a language choice, **I will not consider language requests until after Wednesday 13 September at 1:45 PM, and I will only consider requests by email.**

**Submission Procedure:** Some time between Wednesday 13 September at 1:45 PM and Monday 18 September at 11:59 PM, email me at [lotz@cs.arizona.edu](mailto:lotz@cs.arizona.edu) with a list of your group members and your *top 3* language choices.

### Part 2.

#### A. Language Tutorial (10 points)

For this part, you should learn the basics of your language and prepare an uploadable presentation that covers those basics. Your presentation can be in any format that is uploadable (e.g. a video, a set of slides, a paper, etc.) but keep in mind that it must stand alone. For example, if you do a set of slides without a video, your slides must contain enough information that someone reading through them will be able to get all the

relevant information. The presentation will be graded according to the following guidelines:

- Basic syntax (3 points)
- Simple code examples to illustrate the syntax (3 points)
- Information about the history of the language—who developed it, when, and why? (1 point)
- A discussion of how the language is classified—use as many descriptors as necessary to give us a full view of the language’s characteristics. (1 point)
- A brief discussion of what makes this language special. (1 point)
- Overall quality of presentation (1 point)

**Submission Procedure:** Submit on D2L under “Project 1 Part 2 Language Tutorial” as a single file. If you have multiple files, put them into a zipped folder and submit that.

### **B. Program Proposal (10 points)**

In this part, you must provide a proposal for a larger program that you will submit. Type up your proposal and submit as a PDF. It will be graded according to the following guidelines:

- brief description of the program you plan to submit (3 points)
- a brief description of how you will provide evidence that the program works –i.e. a plan for testing (2 points)
- an overview of how you plan to divide up the work—note that all members of the group should be involved in the coding process (1 point)
- a brief explanation of how your program showcases what is special about the language (2 points)
- a justification for the extent and complexity of the program—i.e. explain how it meets the time/effort expectations\* (1 point)
- length & overall quality of proposal (1 point)

**Note:** Do not exceed 2 pages. This is meant to be a brief overview of what you plan to do.

**Note:** This is a proposal, and it is understood that your plans may change as you work through the project. That is okay. What I am looking for here is a clear plan for a program, so that I can give you feedback early on and help you change course if necessary.

\*This part of the project should be approximately 10 hours of work per group member.

**Submission Procedure:** Submit a single PDF to D2L under “Project 1 Part 2 Program Proposal”.

## **Part 3.**

### **A. Program (40 points)**

The requirements for this part are fairly general because the type of program and the complexity will depend on the size of your group and the language that you choose.

Here are the general guidelines:

- The program should be complex enough that each member of the group should spend about 10 hours on it.
- The program should showcase what is special about the language. The idea is to show off that you have learned the language and can program in the language at a medium level of proficiency.
- Every member of the group should be involved in this.
- You must provide well-documented and thorough test code to show us that your program works as expected.
- You must provide a README with a description of your program and all the tests, as well as clear instructions on how to run it.
- Your code should be well-documented.
- This program should go beyond the basics that you did in Part 2 as the goal is to take the basics and build something more complex with the language.

**Grading Criteria:** The program will be graded according to complexity, accuracy, style/documentation, testing, creativity, completeness, and how well it showcases the language.

#### **B. Summary Presentation (15 points)**

Here, you should provide another uploadable presentation that presents your program. I recommend doing a short video (5-10 minutes) to go through your ideas and your process, as well as highlight some of the code. However, if you choose a different mode of presentation, you may as long as it meets the requirements.

Things to Include:

- A description of the program and how it showcases the language
- A description of your development process
- Challenges you faced
- A discussion of how this language compares to other languages you are familiar with (especially Python and Java)
- Your opinion of the language
- Some highlights of the code--and I do mean "highlights"--please do not spend the entire presentation going through every detail of the code (which should already be available and well-documented).

**Grading Criteria:** The presentation will be graded according to completeness, accuracy, and overall presentation quality.

**Submission Procedure for parts A and B:** Put all files into a zip drive and upload them to D2L under "Project 1 Part 3 Program and Summary Presentation".

### C. Final Summary of Work Distribution (5 points)

Submit a brief description of the work distribution among your group.

**Note:** I expect every member of the group to be involved in every aspect of the project—that is, everyone should be involved in the coding and the presentation parts (though it is okay divide up the work within those sections).

**Note:** If it is clear that some members of the group did not contribute to the project as much as they should have, it may mean that individual members may be assigned different grades.

**Submission Procedure:** Upload a single PDF to D2L under “Project 1 Part 3 Final Summary of Work Distribution”.

### Final Submission.

This project is broken up into these parts in order to help you manage your time and also to help us with the grading. Additionally, it gives us a chance to provide feedback throughout the process.

- You have one week between the Part 3 deadline and the final deadline. During this week, you are encouraged to make changes to the items in Part 3 and resubmit.
- You should not resubmit anything from Parts 1 and 2.
- In addition, you should also submit a page summarizing the changes you made to Part 3. This will help speed up the grading process, as it will enable us to look specifically at the changes you made.
- You should also upload your final **Program** and **Summary Presentation** to Piazza. You may do this anonymously if you want, but please upload your work, so that everyone can see what you did. **Please make sure you do not submit anything else to Piazza. It would not be good if your “Final Summary of Work Distribution” was uploaded to Piazza, for example.**

### Submission Procedure:

- Put your files for the Program and Summary Presentation into a zipped folder and upload it to Piazza in the “Project 1” folder. Put your Group number in the title of the post. You can post anonymously if you choose.
- If you made changes to your final submission, resubmit your Program and Summary Presentation, as well as a PDF summarizing the changes you made as a zipped folder to D2L under “Project 1 Final Submission”. If you did not make any changes for resubmission, you do not need to submit anything here.

### Part 4. (15 points)

It may seem odd that there is a Part 4 after the Final Submission, and that it is not listed in the schedule. But this part of the assignment is to make sure everyone gets a chance to see other groups work (in lieu of in-class presentations). This part is done *individually*, not as a group. Each of you will be assigned to three other groups, and you should look through their materials

and provide feedback on Piazza. Your feedback should show that you actually engaged with the materials. You are encouraged to ask questions and provide thoughtful and constructive feedback. (Simply writing “good job!”, for example, would not be enough.)

**Grading Criteria:** 5 points per post–credit given for thoughtful, constructive feedback and/or questions that show you have engaged with the presented materials.

**Submission Procedure:**

Provide your feedback as a “followup discussion” under the appropriate group post on Piazza.