CSCI 120 Final Project

Due Date: Project ideas are to be submitted on Canvas by Friday Apr 5th 6pm. The final project is to be submitted via gitkeeper by the end of your final exam period, May 6th 12:15pm.

Points: The final project is 20% of your final grade in the course. The project will be graded out of 100 points. The project grade is the points for the Correctness Requirements minus the deductions for Qualitative Requirements.

Project Ideas

The final project will be designed by you and the instructor. Every student will have a different project. To get ideas for the project, you are to talk with 2 to 3 faculty members, preferably in your chosen field of study, with whom you currently have classes, or who you are meeting with about advising. You are to talk about how computers and computer science are used within their field. There is a worksheet on Canvas for you to fill out for each faculty you talk with the primary question being:

> How does computer science or how do computers assist in the scientific method for the discipline? How do they assist in proving (or disproving) hypotheses?

These are due on Friday, April 5th at 6pm. The following week you will be required to meet with your instructor to design the actual final project utilizing these ideas. Upon designing the idea, the instructor will email the requirements for your personal final project.

Requirements

Even though all final projects will be custom, they will all share many traits:

- Must make good use of functions
- Must write tests for functions that have no user input, printing, or randomness
- All user input must be validated and the program must never crash
- Variables must be appropriately named
- Must appropriately use loops and conditionals
- Structured data types including lists-of-lists and dictionaries

All projects will also include one or more of the following:

- Plotting of data using matplotlib, possibly interactive plots
- Reading and/or writing of files

Correctness Requirements

Instructor will test program and deduct points for incorrect solutions at their discretion.

Points	Requirement
100	Program solves the defined problem
	TOTAL

Preparations and Qualitative Requirements

These are deductions from your Correctness Requirements score. Additionally, you are not allowed to use Python features that have not been covered in class or presented in your zyBook unless you discuss the use of such features with the instructor before the project is due. Failure to adhere to this rule will result in major deductions at the discretion of the instructor.

Points	Requirement	Deduction
10	At least 2 project ideas were solicited from faculty	
5	Meeting with instructor to discuss project definition	
5	Program headers with purpose, course, and author specified	
5	Variables have names that describe their purpose	
5	Functions have names that describe their purpose	
10	Tests written for every function that doesn't have user input, print, or have randomness; tests cover all the possible situations	
10	Program makes appropriate use of functions	
10	All user input is fully validated and program never crashes	
10	Appropriate use of control statements (`if`, `else`, `elif`, `for`, `while`)	
10	Program code is easy to read and understand	
20	Met with instructor in a timely manner to address problems (i.e. before last week of project)	
100	**TOTAL**	