1 Team Project

Due: May 4 by 11:59p

Important Reminder: As per the course *Academic Honesty Statement*, cheating of any kind will minimally result in your letter grade for the entire course being reduced by one level.

1.1 Aims

The aims of this project are as follows:

- To give you some exposure to working in teams.
- To allow you to develop your own requirements.
- To provide you further experience with comparing the performance of algorithms.

1.2 Requirements

1. Form a team containing a total of 3 students to work on this project. The team can contain students registered for either 240A or 240B.
   - A team containing a single student will not be allowed.
   - Teams of more than 3 students will not be allowed.

   Some exceptions for the above team sizes may be allowed in order to satisfy the laws of arithmetic.
2. Come up with an application for which multiple algorithms and/or data structures are applicable. These algorithms and data structures need not be limited to those which have been covered in this course.
3. Set up a repository for this project on either github or gitlab.
4. Write a clear but succinct requirements document stating exacly what your project is attempting to do..
5. Generate input data for your problem.
6. Implement the alternative algorithms and/or data structures.
7. Compare the performance of the alternatives. Performance metrics can include:
   - Time.
   - Space.

- # of operations.

8. Analyze and summarize your results using tables or figures.
9. Share your project via git.
10. Present your project in a brief 15 minute zoom meeting.

All documentation should be written using markdown so that it can be read directly on the github or gitlab web sites.

1.3 Git Repository

Unfortunately you cannot reuse your current `i240x` github repositories for this project as you will need 3 additional collaborators for this project and github allows only a maximum of 3 collaborators for free private repositories.

Hence one team member will need to set up another private repository. This can be on either github or gitlab. This repository should be shared with the other 2 team members as well as `umrigar`.

1.4 Evaluation

Some of the factors which will affect the evaluation of this project:

Code Quality
- Well structured code. Short functions which respect the *single responsibility-principle*.
- Good encapsulation.
- Avoiding global variables, especially global variables which are written into after initialization.
- Understandable code. Need not be commented but should still be easily understandable.
- Regularity in naming.
- Consistent code formatting.

Problem choice A very trivial problem or **complete** reuse of code from the course will be penalized.

Documentation Should see brief, to-the-point documents re. points (4) and (8) above.

Team Participation There should be commits by all team members.

1.5 Deadlines

4/18 Report team composition and choose presentation time slots using a spreadsheet which will be made available by 4/13.

5/4 Project completion, final commits to project repository.

5/5, 5/6 15-minutes presentation of each team's project within 20-minute time slots between 11:00a to 2:00p and 3:00p to 6:00p on Tue 5/5 and Wed 5/6.