**CMPSC 462 (FALL 2022)**

**Software Development**

**Goal:** The goal of this project is to Design and Develop your own Software of Interest implementing a Tree or Graph data structures (apart from other preliminary data structures) using Python. You can identify any domain of interest except games and develop a functioning software.

**Report:** The project report (elaborate report – around 7 to 10 pages excluding title and outline pages) should contain the following:

1st page: Project Title, course name, student’s name, instructor name and date

2nd page: Outline of the report with corresponding page numbers.

1. Introduction
2. Background / Theory (optional)
3. Design and Implementation

* Design should also include a block diagram or class diagram or any UML diagram.
* Choose a proper data structure and justify why are you using this data structure by comparing the pro and cons with other data structures.
* Discuss user and functional requirements of the software.
* Explain the development of the software and also explain the functionalities with help of appropriate code snippets.
* Perform time complexity analysis for some of the 2 main functions.

1. Results/Sample Outputs

Note: If you use a large set of data, you can show a sample result as a screenshot. You need not show all the data entries in the sample.

1. Conclusion

Have a brief conclusion. Also list out each individual’s contribution towards the completion of this project.

1. References

**Due Dates:**

**10/19/2022 @ 9:00 pm** - Proposal slide (you should submit 1 slide expressing your project idea in canvas). Each student will be given 90 seconds to talk about their proposal and teams will be formed on the same day. (5 points)

**10/27/2022 @ 10:30 am** for submitting Abstract, Goal, Objectives, Class/Block/Design diagram (10 points) - report have to be uploaded in CANVAS

**11/29/2022 - 12/01/2022 - peer review report** (5 points) - report have to be uploaded in CANVAS – minimum 70% work should be completed.

**12/12/2022 @ 9:00 am** – Presentation video, Final report and codes submission in CANVAS (80 points)

Each student has to do 7 - 12 minutes presentation / demonstration video and upload it in Canvas.

**Deliverables in CANVAS:**

* Video, Report, codes and data as a zip file.

5 points would be detected for each day if submitting past the dead line**. No other opportunity would be provided for project demonstration unless there is an unavoidable circumstance** and reported to the Instructor prior to the presentation date.

**Total Points for the Project: 100 points**

/\* All students are expected to use appropriate amount of comments to explain their program. \*/

Students should perform a formal presentation to demonstrate their software design.

You can use the sample report format attached here for the full report submission.



CMPSC 462 (Fall 2022)

Data Structures

Final Project:

Your Project Title

Team Member’s Name here

Instructor:

Submitted On: Date here

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1. **INTRODUCTION**

Introduction for the project

// Insert page numbers in all page and so you can refer it in the Outline.

1. **BACKGROUND (optional)**

You can discuss the theory behind any specific functions being used in the software

1. **DESIGN & IMPLEMENTATION**

* Design should also include a block diagram or class diagram or any UML diagram.
* Choose a proper data structure and justify why are you using this data structure by comparing the pro and cons with other data structures.
* Discuss user and functional requirements of the software.
* Explain the development of the software and also explain the functionalities with help of appropriate code snippets.
* Perform time complexity analysis for all the important functions.

1. **RESULTS / SAMPLE OUTPUTS**

Note: If you use a large set of data, you can show a part of the screenshot for your sample result.

1. **CONCLUSION**

Include each team member’s contribution too.

1. **REFERENCES**

Cite your source of reference here