

Learning Outcomes

This project is a venue for the students to achieve the learning outcomes below:

LO1. Collaboratively build systems that consider a number of paths or strategies in order to improve its performance in achieving its goal in less amount of computing time, or by some other metric of performance.

LO5. Articulate ideas and present results in correct technical written and oral English

Students will demonstrate their skills in modeling, developing, and evaluating search algorithm of their choice. They are going to simulate how path finding is computed. They will also write a report explaining strengths and weaknesses of their simulator.

Project Requirement

1. Students need to choose one (1) search algorithm and write a program in any programming language to simulate the optimal path finding.
2. The algorithm should be dynamic that it is able to change the behavior if the goal state is changed or if the state space is changed. The minimum depth for the search is 4 (d_3).
3. Students need to apply their creativity in the program to interact with users and display the output. Some sample work can be referred in the following links:

<https://plainenglish.io/blog/uniform-cost-search-ucs-algorithm-in-python-ec3ee03fca9f#pseudocode>

<https://gist.github.com/Kautenja/29f13b543ecd210202417dfc9e328249>

4. Any references made on the existing codes must be acknowledged. Codes should not be 100% copied, however they can be adopted and modified to suit your requirements. A serious penalty will be given to a plagiarized project.

Report Guideline

In addition to the above program, students must write a report containing the following sections:

I. Introduction

- Describe the chosen algorithm. You may use figures for illustration.

II. Pseudocode

- Explain in detail the process that you used in translating the real-world information into formulas in the knowledge base. Cite examples.

III. Results and Analysis

- Provide the screenshot with explanations.
- Summarize the strengths and limitations. Provide suggestions for the limitations (if any).

IV. References

- Use APA citation format.

V. Contributions of Each Members

- Explain in detail the contribution of each group member in the completion of the project.

The report should also include a title page containing the members of the group.

There is no minimum number of pages for the report, but keep in mind that you will be graded based on its substance, readability and completeness.

Deliverables

You are to submit the following through AnimoSpace on or before the deadline set by the instructor:

- The executable program (ready to run). This should be in a folder named **app**. If there are additional files needed for the program to run, make sure to include them. Include in this folder the instructions needed to run the program. **Include instructions on how to use it as well if it's not intuitive from the program itself like a README.txt file.**
- The complete source codes used for the program. Put these in a folder named **source**.
- A .pdf document containing the report. Name this file **report.pdf**.

These are to be submitted as a single zip file with a filename of **MC02_<surname 1>_<surname 2>_<surname 3>_<surname 4>.zip**. Please make sure that you comply with the naming conventions and format of the submission.

Rubric

Program	Program is executable and meet the objective (5 marks)	Program is executable and partially meet the objective (4 marks)	Program is partially executable and partially meet the objective (3 marks)	Some errors in the program (1-2 marks)	/ 5
Report	Report is completed with clear and sufficient explanations (5 marks)	Report is less completed with sufficient explanations (4 marks)	Report is less completed with less explanations (3 marks)	Report is not completed (1-2 marks)	/ 5
Presentation	Clear, confidence, show full understanding and able to answer questions (5 marks)	Clear, confidence, show less understanding and able to answer questions (4 marks)	Not clear, less confidence, show less understanding and having difficulties to answer questions (3 marks)	Having difficulties to present and to answer questions (1-2 marks)	/ 5
Idea	Super creative (5 marks)	Very creative (4 marks)	Creative (3 marks)	Acceptable (1-2 marks)	/ 5
Total Marks					/ 20