

CS3613 - Assignment 1

Deadline - 22nd November 2022 11.59 PM.

Suppose you were asked to organize CSE outbound, which has been on hold in the past few years due to covid. In CSE outbound, the current students, past students, and the staff get to gather and participate in games in teams. In the end, there is a talent show and a prize giving. Everyone at CSE loves CSE outbound as it is a day full of fun, food, and presents. However, organizing this event is a challenging task. It involves many tasks, and some tasks depend on completing other tasks. For example, a subset of tasks(6 tasks) and their dependencies are shown below.

task 1 → task 2
task 1 → task 4
task 4 → task 2
task 4 → task 5
task 5 → task 6
task 2 → task 3

The order of the above tasks that should be completed to organize the event successfully is given below.

task 1, task 4, task 2, task 3, task 5, task 6

In some cases, there is more than one ordering of tasks that allows you to organize the event successfully. To derive the order of tasks, you decided to use your knowledge from the AI module.

Your task in this assignment:

Write a Python script to return one of the plausible ordering given a set of tasks and the dependencies among them.

Your script should read the input.txt file to obtain the set of tasks and their dependencies. Check the input.csv file. After applying your algorithm, the resultant sequence(comma separated) should be written to the <<Your Index Number>>.txt file. Check the file named 123456.txt in the assignment folder. To test your algorithm, you can use the example given. In evaluation, a different set of tasks and their dependencies will be input into your algorithm and checked for output.

This assignment is graded automatically. Therefore, ensure your script runs without errors and adheres to the given description.

Use Python 3.8 for the implementation.

Upload your script renamed with <<Your Index Number>.py to Moodle by the deadline.

Hint: This problem can be solved using an algorithm we discussed in class. You may not need to use any Python library for this assignment.

If you have any questions, email sandarekaw@cse.mrt.ac.lk.