Class Project for Programming Fundamentals (COMP 1011)

Deadline: May 11, 2021

Objectives

1. Acquire the skills and experience of working on a C++ mini-project in a group.
2. Apply sound methodologies and practices to solving problems using C++.
3. Acquire some experience in presenting a demo to a public audience.

Project Requirements

1. Topics: Please choose one of the following three topics.
    a. MTR travel Saver

        This project develops a program to save the MTR travel cost for a family. To make it simple, we do not consider other traveling means. You may find an adult fare table from http://www.mtr.com.hk/en/customer/tickets/octopus_fares.html. Assuming that there are n > 1 family members. Each one of them will travel starting from home to another station. Generally, the destination stations are different. This program will compute the location (in terms of the station) where they should live to minimize the total travel cost.

    b. Introducing recursion

        Write a program that will introduce the concept of recursion and give at least 3 examples (from beginner level to advanced level) to illustrate it.

    c. Course search in COMP

        Write a program that will allow users to search undergraduate courses in COMP by using keywords. You should find all the undergraduate courses at https://www.comp.polyu.edu.hk/en-us/study/undergraduate-programmes/subject, and store the information about courses. The users would input keywords and the program should return all of the related courses (e.g., the course name contains a keyword). For each returned course, its course name and pre-requisite information should be included (You might include more other information). You need to create a special structure for courses. You should use a suitable and efficient search algorithm.

2. Expected amount of work: around 20-30 hours
3. Deliverables:
    a. The .cpp codes
    b. A description of the project, including the problem, program design, and structure of the program (at least 3 pages and at most five pages).
    c. A five-minute video that demonstrates and explains the project and outcomes.

Assessment

1. Program design (30%): Is the program structured well for good readability, maintenance, and extension? Does the program give useful messages to the user for exceptions?
2. Correctness of the program (40%): Does the program fulfill the requirements and run without errors?

3. Program documentation (10%): How well is the code documented? Can the program be understood without much effort?
4. Demo quality (20%): Is the demonstration clear and effective? Does the demonstration motivate the audience to try the software?

Deadline

Upload to the Blackboard your codes, a description of your program design with at most 5 pages (single space and Times Romans 11pt), and a five-minute video before 23:59 PM 11 May 2021.