SCHOOL OF PRE-UNIVERSITY STUDIES

Foundation in Computing /

Foundation in Engineering

Introduction to Algorithm

(ITS30705 / ITS30405)

Group Project

Semester	August 2020
Hand Out Date	20th October 2020 (Tuesday)
Hand in Date	22nd November 2020 (Friday 11:59pm)
Weightage	20%
Assignment Type	Group of 4 – 5

*** Academic impropriety:**

Submitting the course work means you have agreed that your work is original and comply with the rules and regulations of Academic Impropriety.

Note: Copying, cheating, attempts to cheat, plagiarism, collusion, and any other attempts to gain an unfair advantage in assessment result in award 0 marks to all parties concerned.

LEARNING OUTCOME

This assignment has been designed for students to:

- Demonstrate problem-solving skills using different sorting algorithms, randomized algorithms and bridge problem.
- Demonstrate practical skills in basic Python programming design by developing various control structures and algorithms such as selection structure, repetition structure, array and basic data structures.
- Demonstrate skills in a group in developing a simple desktop application using basic Python programming.

ASSIGNMENT DESCRIPTION

This assignment requires students to:

- **Develop a console program using Python.**
- **Produce a project report.**
- **Fill up peer assessment form (Download from https://tinyurl.com/y4s2he8v)**

Choose one of the topics below and develop a console program using Python. Your program should have at least 5 features. Listed below are the suggested project's topic.

Group Project Topics:

a) Class attendance system.
b) School library system.
c) Exam marks and grading system.
d) Point of Sales (POS) system.
e) Inventory system.
f) Propose own topic (Seek for lecture's approval before proceeding)

Project report's requirements:

1. Cover page.
2. Team structure:
    a. Member full name and student ID.
    b. Role and responsibilities
3. Program's features:
    a. At least 5 features.
    b. Functionalities of each features.
4. Algorithms used in developing the program (E.g. data searching / sorting).
5. Program's flowchart.
6. References (Books, journal articles, websites and etc…).

Console program's requirements:

1. Develop using one of the following programming approaches:
    a. Structured programming approach
    b. Object-oriented programming approach
2. Consists all program's features described in project report.
3. User friendly user interface:
    a. Information display.
    b. Screen navigation.
    c. User input
4. Free of Program's bugs, none of syntax error or logical error.
5. Optimized program's performance.
6. Coding standard:
    a. Code refactoring.
    b. Code lines formatting and indentation.
    c. Naming convention.
    d. Comments

SUBMISSION INSTRUCTION

1. Compress all Python source code files (.py), project report (.doc or .pdf), peer assessment form (.docx) and all other relevant files (charts, images and etc) into one zip file and name as "ITS30705_Project_GroupName.zip" (E.g. ITS30705_Project_Group1A.zip).
2. Re-verify the zip file before submission to ensure that no files are missing in zip compression, to avoid major marks deduction due to program failed to run as one of the source codes files (.py) missing.
3. Submit the zip file into TiMES portal **BEFORE THE DUE DATE** specified in this document's cover page.
4. After the submission, double check again the file upload in submission page to make sure that latest version of the zip file is uploaded successfully in TiMES portal.

Important Notes:

a) Emailed assignment will not be accepted.
b) Late submissions will be penalized as per school policy.
c) Each student is expected to contribute significantly to all deliverables as the assignment is a joint effort. In the event where a student's contribution is grossly unequal, marks shall be deducted and awarded to a group member who has done the work of his teammate (if applicable).

MARKING RUBRIC

Marking Criteria	Outstanding (8-7)	Good (6-5)	Average (4-3)	Poor (2-0)
Report's Requirement (1, 2 and 6)				
Report's Requirement (3)				
Report's Requirement (4)				
Report's Requirement (5)				
Program's Requirement (1)				
Program's Requirement (2)				
Program's Requirement (3)				
Program's Requirement (4)				
Program's Requirement (5)				
Program's Requirement (6)				
Team collaboration (Peer Assessment Form)				
TOTAL MARKS (88 * 20%)				