SCHOOL OF COMPUTER SCIENCES
UNIVERSITI SAINS MALAYSIA
ACADEMIC SESSION: SEM II 2021/2022

CPT 113 – Programming Methodology & Data Structures
Assignment 2

Constructive Alignment	CO	Descriptions	PO	Topic
	CO 2	Construct object-oriented programming with the appropriate data structures.	PO 2	Data Structures and Object-Oriented

PROBLEM STATEMENTS:

Develop Computer Science Student's Registration System which allow a student to do a few tasks such as course registration, add/drop courses, calculate total unit by course type or by semester or overall total units, and display all necessary information. You are free to determine your scope by adding more information and processes. If you wish to include courses grades and calculate GPA/CGPA, refer to the formula inside student handbook.

PROGRAM DESIGN:

- Design object-oriented programming with data structures that demonstrates the use of the following specifications:
  1. Use classes with relevant data and function/method with proper processing
  2. Use data structures linked list/doubly linked list/circular linked list
  3. Use appropriate object-oriented features where necessary
  4. Make a sensible input and output according to scope
  5. Implement multiple files inclusion.
- Grades will be given based on the evaluation **rubric** attached

REQUIREMENTS:

- General requirements:
  1. Input validation
  2. Good interface design
  3. Meaningful comments in source codes
  4. Interactive menu to aid user and easy to follow
- Specific requirements:
  1. Read input data from a text file (only once)
  2. Data must be retrieved and processed from data structures
  3. Data in the class definition cannot be public members
  4. Global variables and recursion are not allowed
  5. Built-in library data structures such as vector, list and binary tree are not allowed
- Report requirements:
  1. Cover page consisting of:
     Course: CPT113
     Semester: Sem II 2021/2022
     Assignment: 2
     Group Number: <Your group number **Please refer to the Google Spreadsheet in eLearning**>
     Member List: <Members full name (Matric Number)>
     Lecturer's Name: Pn. Maziani Sabudin

2. Table of Content
3. Description of the question requirements (also recorded in a video)
    a. What problem your program can solve using object oriented and data structures
    b. Analysis of the problem
    c. Identify the specification of the requirements
    d. Represent your class structure of the program using UML diagram
    e. Make sure you include inputs, outputs, process and your own constraints and assumptions
4. The code (represented in multiple file inclusion). You may compress it if you wish.
5. Sample of cases tested on your program (use print screen with clear print)

- Video recording requirements:
    1. Explain how the program is designed and why the specific data structure is used
    2. Show how the program is used to input, process and output students' registration process
    3. Video must be short and concise - maximum recording duration is 10 minutes
    4. Video need to be uploaded into cloud (you may use YouTube, Google Drive, Vimeo or any manner of publishing but you need to send the url or you are losing all the marks for video). If you are using Google Drive or One Drive or Dropbox, please make sure it is accessible to those with links otherwise you will also miss the marks for the video if you did not grant access when requested

SUBMISSION INSTRUCTIONS:

1. You need to compress/zip all documents into one file. Make sure you have:
    a. The code in .dev, .h and .cpp files
    b. Your report in .pdf file
    c. List of the team member in .txt file
    d. A simple text file (notepad) with the link to your video recording
2. Upload your file in the submission link provided in the e-Learning
3. Name the folder containing the files in the form of **<Group Number>** only
4. There is not specific writing font to use. If you need a relative or comparable size, you may use **Times New Roman** or **Calibri** with **size 11 or 12** for the main content. You may use other font size for sub-title / sub-heading. Please do it in Ms Word or Open Office or Google Doc or any comparable document type and convert to pdf. **Do not write your report in Ms PowerPoint.**
5. Assignment 2 timeline:
    a. Release on 30th May 2022 and submit on 26th June 2022
    b. Failure to submit within the timeframe will render you not getting any marks
    c. No submission outside e-Learning platform will be accepted

Course Policy:

- All assignments MUST be submitted before/on the given date and time. Late submissions without prior approval from the lecturer will not be accepted. One grade will be deducted for each day of late submission.
- **Plagiarism/pirating and copying are serious academic offence. Students that are found to plagiarize/or copying will get an F for the assignment/report or for the whole coursework grade and will be barred from taking the final examination. Please read your undergraduate Programme Handbook about this regulation.**

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