UNIVERSITI SAINS MALAYSIA

CPT111W: Principles of Programming

Assignment 1

System Development (C++)

You work as a programmer in a software company. You are required to create an application that can be shown to customers who want to use the application that can be marketed or used for the company's use. You are given the freedom to choose any idea to present to the supervisor before proceeding to the next stage. Example project are;

1- Bank management system
2- Customer Billing System-Electrical
3- Medical store management system
4- Phonebook application
5- Telecom Billing System
6- Student billing system
7- Smart Dictionary
8- Library Management System
9- Student report card system
10-Railway reservation system
11-Bookstore management system
12-Laundry System
13-Others.

The system you create must be capable of;

1- Request input from user.
2- Calculate Profit. Based on input, the application should be able to calculate the total amount of profit earned, total tax, and net profit.
3- Target Profit. Given some inputs (e.g., example based on the amount of investment and the target amount of profit), the application can tell the user the length of the investment in years.
4- Other features, you can think based on your creativity.

Your program must have the following:

1-Good and interactive user Interface Design (i.e. Presentable manner and easy to understand)
2-Input validation. (e.g. if investor's age is 67 years old, he is not allowed to invest due to age limitation)
3-Input error handling.

4-Meaningful comments in the source codes

5-Built-in function in cmath library is not allowed in your program.

6-Your program should demonstrate the correct and appropriate use of selection and repetition control structures.

<u>You are required to provide the following:</u>

1. Analyse the problem & Specification of requirements: (A soft copy of document: Max 3 pages)

    a. List of Input /output

    b. Process or formula.

    c. List of Variables and type.

2. C++ program.

Note : You are encouraged to add any additional features or any suitable elements that you learned in class where appropriate to improve the usability and the functionality of your application.

SUBMITION INSTRUCTIONS:

Please submit your assignment (individually):

1) Stage 1: Upload a softcopy 3 pages documentation to e-learning (Introduction, Project objective and problem statement). The name of the file that you upload must follow this format: MatricNo_YourName_Doc [E.g. 123456_LeePiran_Doc].
Deadline: 28 April 2024 11.59 PM)

2) Stage 2: Upload C++ Program to e-learning (methodology). The name of the file that you upload must follow this format: MatricNo_YourName_Code [E.g. 123456_LeePiran_Code].
Deadline: 5 May 2024 (11.59 PM)

3) Demonstration : Week 7

4) Late submission will deduct 5% per day.

Note: The design of the program is unique according to individual!!!!!. Failure to answer on program specification and explanation could lead you to be charged as a copy.

Important Notes:

All assignments must be submitted before/on the given date. Late submissions without prior approval from the lecturer will not be accepted.

Using Chat GPT is prohibited.

Plagiarism/pirating and copying are severe academic offense. Students that are found to plagiarize/or reproduction (copying) will get an F for the assignment/report or for the whole coursework grade.

If you any queries about this assignment, please do not hesitate to contact Ms.Tan Phit Huan (phithuan.tan@usm.my)

<u>Sample Output</u>

Example: If initial amount of investment is MYR 20,000.00, base profit is 7 % and duration of investment is 10 years.
Total Profit: MYR 21,893.25
Service Charge: MYR 547.33
Proft After Service Charge: MYR 21,345.92
Profit Tax: MYR 640.38
Net Profit: MYR 20,705.54