PUSAT PENGAJIAN SAINS KOMPUTER
UNIVERSITI SAINS MALAYSIA
Semester 1 Session 2020/2021

CPT111 – Principles of Programming
Assignment 2 – Food Ordering System

Introduction

Assignment 2 focuses on processing multiple related information using two-dimensional arrays and modular program design where you are required to develop your program using user-defined functions. It also requires you to write a program that interact with Input/Output files.

Instructions

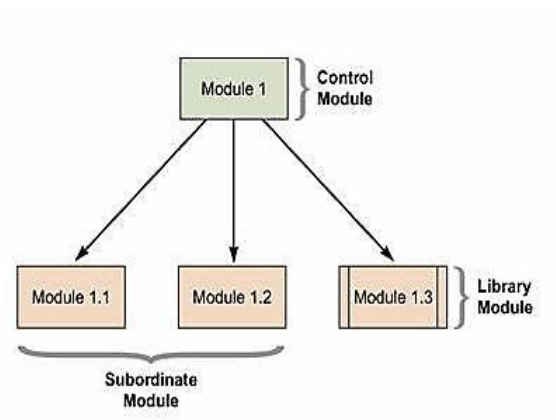
This is an **individual** assignment.

Submission deadline is on 17 January 2021 before 23:55 pm.

Upload the report and program source code (*softcopy*) into e-learning. The name of the file must follow this standard: **NAME-MATRIC NUMBER-Group Number** (in a zip format).

For the report, you are required to include the following:

1. A structure chart of your program that hierarchically shows the various modules (aka functions) and how they link to one another. An example of structure chart is shown below:



2. Flowchart – main function and user-define functions.

3. C++ Program listings - with appropriate comments.

4. Screen shots of input and output of actual runs with all possible test data (testing and validity checks). Sample I/O files content (if relevant).

Problem Statement

We live in challenging yet interesting times. With COVID-19, social distancing becoming a solid norm and eating in a crowded restaurant is no longer possible. However, we can still enjoy the delicious food from the restaurants by having Food Ordering system.

To maintain business, restaurant needs this system to showcase their menu by keeping track the prices,

delivery time, number of orders by customers and sales for each item in the menu. The manager will be able to view the total sales, the most popular dish in the menu and number of customers for the day.

The pandemic will turn you the system developer into warriors of the modern world.

Program Specification

Food Ordering and Delivering system has 2 users, Restaurant Manager and Customer with the following basic process:

1. Restaurant Manager(s)
    a. Create/update menu
    b. Update prices
    c. Accept orders
    d. Calculate total payments per order
    e. Calculate estimated delivery time
    f. Calculate total sales for a day
2. Customer(s)
    a. Order online
    b. Make payments

The system should be user friendly using suitable menu with instructions and easy to navigate with informative display. You may add more users and functions as you wish.

Data Input/ Output Format

Use your own creativity to design the input and output. For input, use text file to create menu and prices (use you own format) and updated prices must be stored in text file. For output, you can either display it on the screen or write the output into a file.

Assessment Requirements:

Data validation is compulsory. If any is invalid, print appropriate messages on the screen.

Reading and writing to from/to external file should be done only once for a single program run.

All data to be processed should use appropriate two-dimensional arrays or parallel arrays and functions according to specific tasks.

Your assignment will be evaluated based on the following criteria and the rubrics as attached:

- Functionality – perform the required tasks
- Program design [flowchart and structure chart]
- Ability to use appropriate control and data structures (selections, loops, functions, arrays)
- Source code (efficient coding, relevant comment, user friendly, etc.)
- Input validation [e.g. delivery time]
- Good user interface, application and creativity [menu for users]
- Good documentation

Course Policy:

- All assignments MUST be submitted before/on the given date. Late submissions without prior approval from the lecturer will not be accepted. One grade will be deducted for each day, for students with approval.
- 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.