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| **TMF1414 Introduction to Programming**  **Project (20%)**  **Due Date: 6 December 2019, before 4pm** |

**Learning Outcomes:**

To demonstrate the ability of students to:

* Distinguish the basic problem-solving techniques in developing algorithms and programs for given problems. [C4]
* Construct complete programs based on a given specification. [P4]
* Construct the process of top-down, stepwise refinement to benefit all related software construction task. [P4]
* Justify the solution clearly and confidently. [A3, TS]

**Objectives:**

To demonstrate the ability of students to:

* design and develop a **console program** that receives inputs from user and display correct outputs;
* apply **modular programming** to solve given problem effectively using functions; and
* use appropriate **derived data types** to manage data for the project. For instance, array, structure and files.

**Problem Statement(s):**

Construct a console program to simulates the Chicken Rice stall.

**Requirements:**

Your system should be able:

1. To display the menu as in *Figure-1* for user to take customer orders;
2. To allow up to maximum 4 packs of chicken rice orders for each customer;
3. To display the details of chicken rice orders made by each customer and the calculated total price in a single receipt;
4. To operate continuously to take orders from customers until user choose to terminate from the system;
5. To display all the transaction details at any time when it is needed; and
6. To save all the order transactions to a file (.txt or .dat) as illustrated in *Figure-2* before the system is terminated.

You should show program modularity in your solution using functions, and also demonstrate ability in passing argument(s) to and returning value from called function in your program. Besides, your project MUST apply the following mechanisms to store and organize the data for your project:

1. Array / Pointer
2. Basic Data Structure
3. File Operations

Following Figure-1 is the Chicken Rice menu available My Chicken Rice stall:

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| --- | --- | --- | --- |
| **Chicken Rice Menu** | | | |
| Package | Regular (R) (RM) | Special (S)  (RM) | Extra (RM) |
| 1. Steam Chicken Rice | 8.50 | 10.00 | Liver /1.00 each  Gizzard/ 1.20 each  Egg /1.50 each |
| 1. Roasted Chicken Rice | 8.50 | 10.00 |
| 1. Curry Chicken Rice | 9.50 | 11.00 |
| 1. Fried Chicken Rice | 8.50 | 10.00 |
| Options :  Add Extra : Liver/ Gizzard/Egg | | | |

Figure-1:My Chicken Rice Menu

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Extra** | | |  |
| **Receipt No.** | **Chicken Rice** | **Type** | **Liver** | **Gizzard** | **Egg** | **Amount (RM)** |
| 001 | Steam Chicken Rice | R | 1 | - | - | 9.50 |
|  | Curry Chicken Rice | R | - | 1 | - | 10.70 |
| 002  003 | Fried Chicken Rice  Curry Chicken Rice    Roasted Chicken Rice  Fried Chicken Rice  Steam Chicken Rice  Curry Chicken Rice | S  R  R  R  S  S | -  1  -  1  1  - | 1  1  1  -  1  1 | 1  1  -  1  -  2 | 12.70  13.20  9.70  11.00  12.20  15.20  Total : 95.80 |

Figure-2 : Example of transaction details of all the Chicken Rice orders

**Deliverables:**

A set of bug‐free working program in C programming. LGNo\_RegisteredGroupNo.c – eg: *LG03\_Group08.c*

**Remarks:**

* This project must be done in group of FOUR (4) to FIVE (5) members;
* Plagiarizing will be penalized, no mark will be given;
* The project must be submitted through **eleap.unimas.my** (C source codes) as one zip file and name it with your **L**ecture**G**roupNumber\_RegisteredProjectGroup for example “LG03\_Group08.zip”. You must upload it to **eleap.unimas.my** by **6 December 2019**, **before 4.00pm**;
* Any late submission will only receive 50% of the marks given for your program; and
* All projects Must be presented and all group members should present during presentation session.