TMF1414-Introduction to Programming
Pair Assignment (10%) – (2 students in a group)
Due Date: 5th December 2022 (Monday), before 4.00 pm

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]

Objectives:

To demonstrate the ability of students to:

- analyse the given problem and identify correct requirements.
- produce readable program – indentation, comments, and variables
- produce a correct programming code based on programming design
- design solution and use appropriate control structures to handle program logics based on different conditions and generate correct outputs. For instance, selection and repetition, multiple selections and other control statements.

Problem Statement(s):

Your task is to develop a console program for the billing system for Berjaya Private School. Berjaya Private School provides Primary and Secondary education services for National and International Programmes. The details of the fee structures are given below.

1. Registration Fee (non-refundable & non-transferable) – Payable only once
   a) Primary   RM500 per admission
   b) Secondary   RM500 per admission
   c) International   RM650 per admission

2. Assessment Test Fee (Non-refundable) (Note: Applicable for new students only) RM150 per assessment

3. Admission Fee (Non-Refundable & Non-Transferable) - Payable Only Once
   (Note: Applicable for new students only)

   a) Primary & Secondary   1st Child RM2,000
                               2nd Child RM1,000
                               3rd Child RM 500
                               4th Child Free
   b) International
      i)   Year 7, 8 and 9   1st Child RM4,000
                               2nd Child RM2,000

3rd Child RM1,000
4th Child Free

ii) Year 10 and 11   RM2,000
iii) Year 12 and 13   No admission fee payable

Note: The definition of the number of children is that they must still be studying in Berjaya Private School at the point of joining.

4. School Fees (Non-Refundable)
    a) Primary

Class	Per Quarter (RM)
Primary	
1 to 3	1,350
4 to 6	1,550

   b) Secondary (National Programme)

Secondary	
Form 1 to 2	1,575
Form 3	1,650
Form 4 & 5	1,925

   c) Secondary (International Programme)

Class	Malaysian Students	Non-Malaysian Students
Year 7	2,200	2,600
Year 8 & 9	2,400	2,800
Year 10 & 11	2,600	3,000
A Level Program		
Year 12	3,400	4,100
Year 13	3,600	4,300

Quarter Last day for payment of school:
   a) First Quarter 28th January
   b) Second Quarter 31st March
   c) Third Quarter 30th June
   d) Fourth Quarter 30th September

Requirements:
- Your program would produce a receipt showing the total fees that a student would need to pay upon registration.
- Based on the date on the receipt, your program will output the next payment date as a reminder.
- The date would be auto-generated based on the computer's date.

- You can change the appearance of the sample run below to include more information. However, the information shown below must be included in your output.

Here are two examples of how the run might appear:

Sample 1:

```
Date: 3-11-2022
Fees: First Quarter
Name: Charleston Lee
Malaysian? Yes
Program: Primary 2
New/Current student: New
Number of children in Berjaya Private School: 2
Payable Fees:
    Registration fees:   RM500.00
    Assessment fee:      RM150.00
    Admission fee:       RM1000.00
    School fee:          RM1350.00
    Total Payable Fees during registration:  RM3000.00
    Next payment fee: RM1350 latest by 31 March.
```

Sample 2:

```
Date: 3-11-2022
Fees: Second Quarter
Name: Amalina Grace Sulaiman
Malaysian? No
Program: International Year 7
New/Current student: Current
Number of children in Berjaya Private School: 1
Payable Fees:
    Registration fees:   RM650.00
    Assessment fee:      RM0.00
    Admission fee:       RM0.00
    School fee:          RM2600.00
    Total Payable Fees during registration:  RM3250.00
    Next payment fee:    RM2600.00 latest by 30 June.
```

Deliverables:

a) A set of bug-free program (source code) named in the following format: **RegisteredAssignmentGroupNo_StudentIDs.c** – eg: **G1_AG8_10021_10033.c** – *this file is submitted by the students with matric no 10021 and 10033 who have registered to Assignment Group 8*

b) Refer to the assignment rubric on how to document your report (eg: rpt_ AG8_10021_1003310021_10033.pdf). Your report should not exceed **5** pages (excluding the cover, the table of content and proof of discussion) in **pdf** format. The font type is

Century Schoolbook and the font size is **11** with **single spacing**. The font size for flow charts is **10** with single spacing. Your report should contain:

   i.   Assignment cover
  ii.   Table of content
 iii.   Introduction
  iv.   Flow charts OR (choose one)
   v.   Pseudocode
  vi.   Screenshots (sample run of your program) with brief descriptions
 vii.   Proof of discussion (2-3 WhatsApp chat or meeting record/pictures show discussion on the assignment).

Remarks:

- This assignment must be done in **pair (2 students)**;
- **Plagiarism will be penalized; no mark will be given;**
- The assignment must be submitted through **eleap.unimas.my** (C source code, and softcopy of the report in pdf format) as one zip file and name it with GroupNo_AssignmentGroupNo_StudentIDs format, for example "G1_AG8_10021_10033.zip". You must upload it to **eleap.unimas.my** by **5th December 2022**, **before 4.00pm**; and
- Late submission will only receive up to **50%** out of the total mark.