NOTE:

- **Create a folder on Desktop to save your works.**

- **Use comment // to write your name, ID, Group and Lab Question in each program.**

- **Save your file as .c**

REMINDER!

Save your program as C language, not C++ (cpp).

LAB OBJECTIVES

At the end of this lab activity, the students should be able to:

- Use different types of loop statements such as for, while and do while loops to repeat processes in C programs.
- Use different types of control statements to provide solutions in C program.

QUESTION 1

Write a simple C program that calculates the total payment for the purchase made.

- Ask the user to enter the product name and the price.
- Display the item and the price on the screen.
- Sum up the total amount to pay: total = total + price.

Repeat this for three (3) products using a **for** loop.

• Then, display the total payment that needs to be paid by the customer.
(Note: Add function fflush(stdin) before enter product name)

```
Enter product's name : Laptop
Enter the price       : RM 2500

Laptop : RM 2500.00

Enter product's name : Thumbdrive
Enter the price       : RM 50

Thumbdrive : RM 50.00

Enter product's name : Printer
Enter the price       : RM 250

Printer : RM 250.00

Total amount          : RM 2800.00
```

QUESTION 2

Write a complete C program to compute total course fees for students.

- Prompt the user to enter their name, ID no, duration of study and the fee for the first year.
- Using the **do-while** loop: (repeat the process based on the duration of study)
  - o Calculate the annual fee, assuming that the course fee increases **5%** every year.
  - o Display the annual fee for each year
  - o Then calculate the total course fees.

- Display the total fees.

Refer sample of output as shown below.

```
Enter name                   : Lina Ling
Enter ID                     : M100501
Enter fee (RM)               : 4150
Enter duration of study (years): 5


----------------------------------
       MULTIMEDIA UNIVERSITY
----------------------------------
Student name       : Lina Ling
Student ID         : M100501
Duration of study : 5

Year       Course Fee
1          RM 4150.00
2          RM 4357.50
3          RM 4575.38
4          RM 4804.14
5          RM 5044.35
----------------------------------
Total Course Fees : RM 22931.37
----------------------------------
```

QUESTION 3

Write the program for a company that wants to track down the amount of donations from their clients.

- Ask the user whether they receive donations from clients.
- If they have (use **while loop**):
  - Ask the name of the company and the frequency of donation.
  - Based on the on the number of the frequency of donation, use a **for loop** to:
    - Ask the donation amount from the company based
    - Calculate the total donation for the client
  - Set a counter to count the total number of clients
  - Calculate overall total donation for all clients.
  - Repeat the process by asking again the user whether they receive donation from clients.
- If there are no more clients, display the summary as shown in the sample output.

  *(Note: Use **fflush(stdin)** whenever it is necessary)*

```
Donation from clients? [Enter Y to continue]: Y

Enter client's name        : Maxis
Enter frequency of donation : 3
Enter amount of donation    : RM 15000
Enter amount of donation    : RM 20000
Enter amount of donation    : RM 25000

Total donation from Maxis : RM 60000.00

Donation from clients? [Enter Y to continue]: Y

Enter client's name        : Digi
Enter frequency of donation : 2
Enter amount of donation    : RM 30000
Enter amount of donation    : RM 45000

Total donation from Digi : RM 75000.00

Donation from clients? [Enter Y to continue]: N

Total Clients       : 2
Total Donations     : RM 135000.00
```

QUESTION 4

Write the complete C program to calculate the payment for the purchase of books from a books store. Once the program terminates, a summary of the sales will be displayed.

- Ask the user to enter their choice. [`"Would you like to continue [Type 1 to continue]:"`
- If the user entered **1**: (Use **while** loop)
  - Ask the user to enter the book code
  - Then check whether the book code is correct or not (Use **strcmp()** function).
    - If correct, proceed to enter quantity.
      - Using if-else statements and **strcmp()** function
        - Set the book price as shown in the table
        - **Set a counter for each book** to count total books that have been purchased.

Book Code	Book Price
B1001	RM 34.50
B1002	RM 77.30
B1003	RM 54.90

      - Calculate the bill amount for the book (quantity x price)
      - Display the bill amount.
      - *Calculate the overall total of the bill.*
    - Else (if the book code is invalid), display a message for the invalid book code (refer the output screen).
    - Then, ask the user to enter their choice again (to repeat the process)
- Otherwise (the user entered other values as their choice (to exit)):
  - Check if total not equal to 0 (at least one purchase was made)
    - Display the summary.
  - Otherwise display "No purchase made".

Sample Output

Sample 1: First time User do not want to continue

```
Would you like to purchase books? [Type 1 to continue] : 7
No purchase made.
```

Sample 2: If user enter wrong book code

```
Would you like to purchase books? [Type 1 to continue] : 1

Enter Book code    : B12345
Your Book code is invalid. Current purchase cancelled.

Would you like to continue [Type 1 to continue] : ▃
```

Sample 3:

```
Would you like to purchase books? [Type 1 to continue] : 1

Enter Book code    : B1002
Enter quantity     : 1

Bill  = RM 77.30

Would you like to continue [Type 1 to continue] : 1

Enter Book code    : B1002
Enter quantity     : 1

Bill  = RM 77.30

Would you like to continue [Type 1 to continue] : 9


Total collection : RM 154.60

Total Book 1 sold : 0
Total Book 2 sold : 2
Total Book 3 sold : 0
```

Sample 4:

```
Would you like to purchase books? [Type 1 to continue] : 1

Enter Book code    : B1001
Enter quantity     : 2

Bill   = RM 69.00

Would you like to continue [Type 1 to continue] : 1

Enter Book code    : B1002
Enter quantity     : 1

Bill   = RM 77.30

Would you like to continue [Type 1 to continue] : 1

Enter Book code    : B1003
Enter quantity     : 3

Bill   = RM 164.70

Would you like to continue [Type 1 to continue] : 1

Enter Book code    : B1002
Enter quantity     : 2

Bill   = RM 154.60

Would you like to continue [Type 1 to continue] : 9


Total collection : RM 465.60

Total Book 1 sold : 2
Total Book 2 sold : 3
Total Book 3 sold : 3
```