**LAB OBJECTIVES**

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

- Create a simple C program.
- Use different data types for different values in a program.
- Use **preprocessor directive** and **const** keyword to define a constant.
- Use **printf()** and **scanf()** functions to display and retrieve data from the user.
- Use simple escape characters in C programs.
- Apply simple mathematical calculations in programs.

## PRACTICE

1. Write a program to display two sentences , "I love Program Design" and "I will score A for this subject" on two separate lines.

- Sample output :

```
I love Program Design.
I will score A for this subject.
```

2. Write a program to display the name and age key in by the user.

- Declare all necessary variables.
- Get the name and age from the user.

- Sample output 1 :

```
Enter name : Peter
Enter id   : 12345

        Student name : Peter
        Student id   : 12345
```

- Sample output 2 :

```
Enter name : Peter Parker
Enter id   : 12345

        Student name : Peter Parker
        Student id   : 12345
```

3. Write a program to add two numbers.

- Declare all necessary variables.
- Get two numbers from user.
- Add the two numbers and display the addition result.

- Sample output :

```
Enter two numbers : 10 20
10 + 20 = 30
```

4. Circular velocity refers to the velocity that one object must travel in order to maintain its circular orbit around another object, usually a planet or other gravitating mass. The circular velocity of an object is calculated by dividing the circumference of the circular path by the time period over which the object travels.

Formula : $circular\ velocity = \frac{2\pi r}{T}$ where *r* is radius and *T* is time

- Declare all necessary variables.
- Get the radius and time from the user.
- Set $\pi$ as constant using **preprocessor directive**.
- Use the formula given above to calculate the circular velocity.

- Sample output :

```
Enter radius (cm)  : 10
Enter time (s)     : 3.25

Radius    : 10.00 cm
Time      : 3.25 seconds
Circular Velocity : 19.34 cm/s
```

5. Calculate the total cost of purchasing A4 papers for a student's assignment.

- Declare all necessary variables.
- Using **const** keyword, declare constant values for the price of each piece of A4 paper.
  - White A4 paper costs RM0.05 per piece.
  - Green A4 paper costs RM0.10 per piece.
  - Pink A4 paper costs RM0.15 per piece.
- Get the quantity for each colored paper from the user.
- Calculate total cost.

- Sample output :

```
Quantity of White A4 paper : 20
Quantity of Green A4 paper : 25
Quantity of Pink A4 paper  : 30

White A4 paper : RM 1.00 (20 x 0.05)
Green A4 paper : RM 2.50 (25 x 0.10)
Pink A4 paper  : RM 4.50 (30 x 0.15)
Total          : RM 8.00
```

6. Write the codes to calculate the deductions and the nett salary of an employee.

- Declare all necessary variables.
- There are two type of deduction. Declare the deductions as constants using the **preprocessor directive**. EPF deduction is 11% and SOCSO deduction is 1%.
- Get salary from the user.
- Calculate EPF and SOCSO deduction amount based on the percentage.
- Calculate the nett salary of the employee.

- Sample output :

```
Enter your salary  : RM 2150

Salary      : RM 2150.00
EPF         : RM 236.50
SOCSO       : RM 21.50
Nett Salary : RM 1892.00
```

## SUBMISSION

You are required to write a complete C program to calculate how much each individual must pay during a group lunch outing.

- Declare all necessary variables.
- Declare the sale tax as a constant using **const** keyword with value 0.06.
- Get the lunch bill amount from the user.
- Get number of person that join the lunch from the user.
- Calculate sale tax amount.
- Calculate total bill.
- Calculate individual bill.
- Sample output :

```
Enter the bill for lunch : RM 150.00
Total number of friends  : 4

Lunch bill      : RM 150.00
Tax amount      : RM 9.00
Total bill      : RM 159.00
Individual bill : RM 39.75
```