

LAB 05:**Loop Statements****1. Scope of Knowledge:**

- Understand and use iterative statements (for, while, do...while)
- Understand loop control statements (break, continue, return, exit)
- Know when to use each loop statement

2. Materials/Softwares/Tools:

- Visual Studio Code
- Draw IO (online) or Microsoft Word

3. Coding Convention:

- All identifiers must be in English and lower case
- Follow the valid identifiers naming rules in C
- Tab is 4 characters
- Curly braces must be aligned
- Statements in curly brackets must be indented by 1 tab

4. Exercise:

Note: Students must draw a flowchart describing the algorithm before programming for each problem.

Exercise 1:

Write the code for the flowcharts drawn in lab 2, which related with loop statements.

Exercise 2:

Draw a flowchart and write the code to execute the program that allows input of characters from the keyboard. The program will notify the entered character is a letter, number or special character and will stop when entering white characters.

Exercise 3:

Draw a flowchart and write a program to print to the screen the numbers that are divisible by 9 between 200 and 300.

Exercise 4:

Draw a flowchart and write a program to execute the following MENU:

```
=====
Bookstore Demo
=====
1. Insert Book
2. Search Book By ISBN
3. Delete Book By ISBN
4. Sort Books List
5. Display All Books
6. Exit
=====
Enter Choice:
```

Notice to the screen of the subject of menu item corresponding to the selection (select 1-6 from the keyboard), if the user enters other than 1-6, the error message will be displayed.

The program will repeat displaying the menu until user choose exit option.

Exercise 5:

Draw a flowchart and write a program to input any positive integer and sum its digits.

For example: Enter the number 2134256 => Sum of digits: 23.

Exercise 6*:

Draw a flowchart and write a program that requires inputting 2 integers n, m and printing the numbers divisible by 7 in the range of 2 numbers just entered.

Exercise 7*:

Write a program to perform input n (integer) from the keyboard and display n numbers in the Fibonacci sequence.

Exercise 8*:

Draw a flowchart and write a program to print the first n prime numbers (n input from the keyboard).

Exercise 9*:

Draw a flowchart and write a program to input an integer in the range $0 \rightarrow 31$. Convert that integer to binary form (do not use the itoa() function).

For example: Enter the number 12 => Binary representation is: 01100.