Department of Statistics & Computer Science, University of Kelaniya
ACADEMIC YEAR – 2020/2021
COSC / COST 11023 – Fundamentals of Programming
Lab Session – 05

Throughout this lab session, you will learn more conditional statements, switch statements and loops in C.

1. Write a C program that prompts the user to enter the number of credit hours earned so far and displays his/her corresponding category:
   First – Year Student: students with <= 30 credit hours earned
   Second – Year Student: 30 < credit hours earned <= 60
   Third – Year Student: 60 < credit hours earned <= 90
   Fourth – Year Student: 90 < credit hours earned
   If the user input is not valid, i.e., credit hours entered < 0, an error message is displayed.

   Test data and expected output (sample run 1):
   ```
   Please enter your total credit hours earned: 35
   You are a Second - Year Student.
   ```

   Test data and expected output (sample run 2):
   ```
   Please enter your total credit hours earned: -10
   Invalid input.
   ```

Upload your completed program to the Lab 05 – Program 01 folder.

2. Write a C program, that reads three integer values from the user (through keyboard entry), then display the three values in ascending order. For example, if the user entered 3 values: 84 3 130, the program should output the three values as: 3, 84, 130. Here are a few example runs of the program:

   Sample run 1
   ```
   Please enter three integer values: 4 10 6
   The three values in ascending order are: 4 6 10
   ```

   Sample run 2
   ```
   Please enter three integer values: 20 5  3
   The three values in ascending order are: 3 5 20
   ```

Upload your completed program to the Lab 05 – Program 02 folder.

3. Write a C program to implement the following statements using a switch statement.

```
if( letter == 'X' ) Ans:
    sum = 0;
else if ( letter == 'Z' )
    valid_flag = 1;
else if( letter == 'A' )
    sum = 1;
else
    printf("Unknown letter -->%c\n", letter );
```

Upload your completed program to the Lab 05 – Program 03 folder.

4. Write a C program that produces the following output.

```
**********
*        *
*        *
*        *
*        *
*        *
*        *
*        *
*        *
**********
```

Upload your completed program to the Lab 05 – Program 04 folder.

5. Write a for loop which sums all values between 10 and 100 into a variable called `total`. Then, display the value of the `total` variable.

Upload your completed program to the Lab 05 – Program 05 folder.

6. Write a C program that prints out the prime numbers between 1 and 100.

Upload your completed program to the Lab 05 – Program 06 folder.