ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)

ORGANISATION OF ISLAMIC COOPERATION (OIC)

Department of Computer Science and Engineering (CSE)

CSE 4108: Structured Programming I Lab
Lab 2

Objectives

- Exploring the idea of the header file and library function
- Experimenting with two library functions

Tasks

1. Write the following C program and execute using any IDE. We have Codeblocks and VSCode installed in our lab. Uplaod the screenshot of your console in Google Classroom as a proof of running the program.

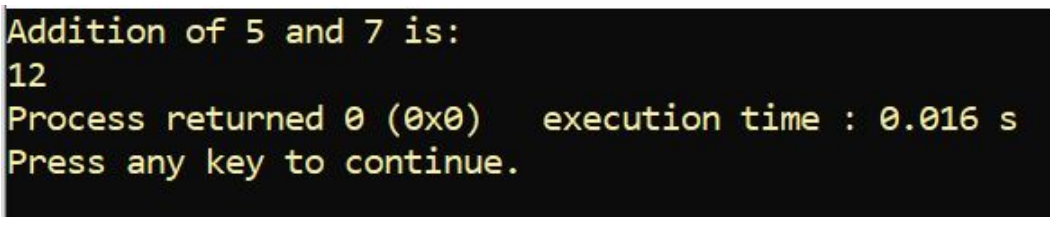
```c
#include<stdio.h>
int main(){
    printf("Hello World");
    return 0;
}
```

2. The printf function does not always prints the exact same string (the collection of characters) passed as its argument. Execute the following program and check the output. Try to understand the output of your program and write a comment inside your program explaining the reason behind the output and upload the code in the Google Classroom.
(If necessary, Clear your confusion about the output by taking help from the teacher.)

```c
#include<stdio.h>

int main(){
    printf("Hello Again.");
    printf("#d#n$-d\n%d?t");
    return 0;
}
```

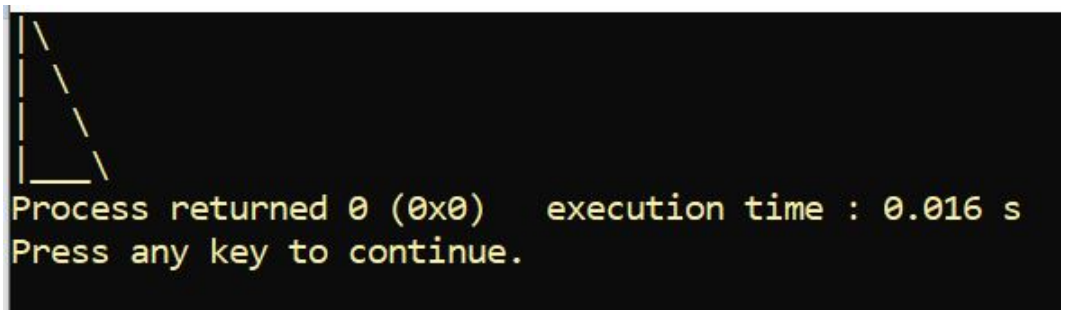
3. Write a program that produces the following output. In this output the number 5, 7 and 12 should be printed as integer, not as a part of the string. Try to write the solution using only one printf function.



4. Write a program that produces the following output. Try to write the solution using only one printf function.
   A sample execution is provided below:
   Sample Execution:

```
\n prints new line
%d prints integer
```

5. Write a program that produces the following output. Use one printf function to complete the task.



6. Write a program that reads the number of total students and teachers of IUT, and prints the average number students per teacher.
   A sample execution is provided below:
   Sample Execution:

```
Number of total students:  4000
Number of teachers:  80
Average number of students per teacher is:  50
```

7. Write a program that reads the base and height of a triangle and prints its area. Make sure your program produces correct results for **any valid inputs**.
   A sample execution is provided below:
   Sample Execution:

```
Base of the trianglee:  5
Height of the triangle:  6
Are of the triangle is:  15
```

You will need *scanf* function to solve tasks 6 and 7.