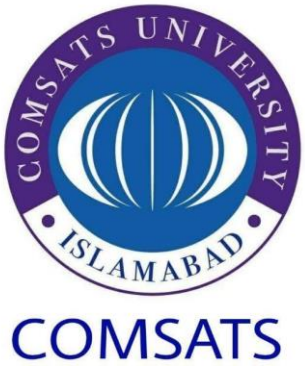
# Lab Work 01
# CSC103-Programming Fundamentals

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**Exercise 1:** Print following shape using simple printf statements (You may print these shapes vertically in one program)

(1)

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

(2)

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

(3)

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

(4)

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

(5)

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

(6)

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

here | exercise 1.c | *exercise 2.c | exercise 3.c | exercise 4.c | exercise 5.c

```
1  #include<stdio.h>
2
3  int main()
4  {
5
6  printf("      *          **********       *             *          *****   ***** \n");
7  printf("     ***         *        *       **           **          ****     **** \n");
8  printf("    *****        *        *       ***         ***          ***       *** \n");
9  printf("     ***         *        *       ****       ****          **         ** \n");
10 printf("      *          **********       *****     *****          *           * \n");
11
12 return 0;}
13
```

"D:\lab sheet 1\exercise 1.exe"

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

Process returned 0 (0x0)   execution time : 0.391 s
Press any key to continue.
```

Exercise 2: Write a program that prints the numbers 1 to 4 on the same line. Write the program using the following methods.
a) Using one printf statement with no conversion specifiers.
b) Using one printf statement with four conversion specifiers.
Printf("%d%d%d%e",1,2,3,4) //Here
%d is the conversion specifier use to print integer values on the screen
c) Using four printf statements

here | exercise 1.c | *exercise 2.c | exercise 3.c | exercise 4.c | exercise 5.c

```c
#include<stdio.h>

int main()
{

printf("1234\n");
printf("%d%d%d%d\n",1,2,3,4);
printf("1");
printf("2");
printf("3");
printf("4");

return 0;
}
```

"D:\lab sheet 1\exercise 2.exe"

```
1234
1234
1234
Process returned 0 (0x0)   execution time : 0.094 s
Press any key to continue.
```

**Exercise 3:** Write a C-Program to perform the simple arithmetic operations (addition, subtraction, multiplication, division, remainder).

art here | exercise 1.c | exercise 2.c | *exercise 3.c | exercise 4.c | exercise 5.c

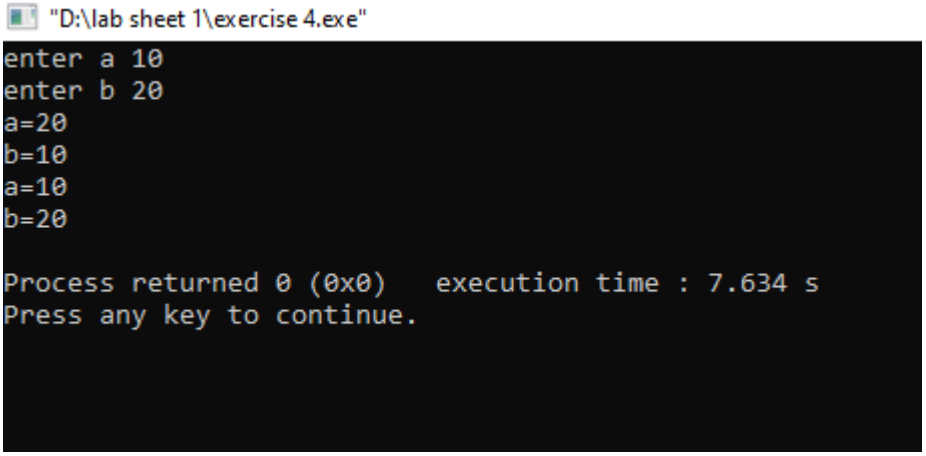
```c
#include<stdio.h>

int main()
{

int a,b,result;

printf("Enter two numbers:");
scanf("%d%d",&a,&b);
result=a+b;
printf("addtion of number is%d\n",result);
result=a-b;
printf("subtraction of number is %d\n",result);
result=a*b;
printf("multiplication of number is%d\n",result);
result=a%b;
printf("reminder of number is%d\n",result);

return 0;
}
```

"D:\lab sheet 1\exercise 3.exe"

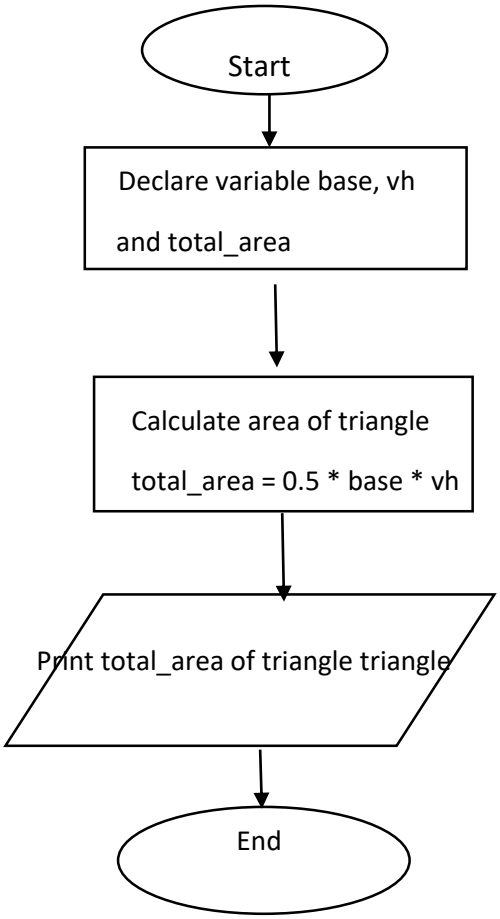
```
Enter two numbers:2 5
addtion of number is7
subtraction of number is -3
multiplication of number is10
reminder of number is2

Process returned 0 (0x0)   execution time : 7.594 s
Press any key to continue.
```

**Exercise 4:** Write a C-Program to swap two integer numbers without and with using third variable.

```c
#include<stdio.h>

int main()
{
int a;
int b;
int hold;
printf("enter a");
scanf("%d",&a);
printf("enter b");
scanf("%d",&b);

a=a+b;
b=a-b;
a=a-b;
printf("a=%d\n",a);
printf("b=%d\n",b);
hold=a;
a=b;
b=hold;
printf("a=%d\n",a);
printf("b=%d\n",b);

return 0;}
```



**Exercise 5:** Write a C-Program to calculate area and Perimeter of the triangle.
[Area of triangle= ½ x base x vertical height]
[Perimeter of triangle = a + b + c]



```c
#include<stdio.h>
int main()
{

float base=3;
float height=6;
float a=0.5;
int area;
printf("print base");
scanf("%f",&base);

printf("print height");
scanf("%f",&height);

printf("print a");
scanf("%f",&a);

area=a*height*base;
printf("%f*%f*%f",a*base*height);

return 0;
```