

LAB 1 Programs

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1. Write a C program to add two integers a and b read through the keyboard. Display the result using third variable sum

//Program to find sum of 2 numbers

```
#include<stdio.h>
```

```
int main(){
```

```
    int a,b,sum;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter value of a\n");
```

```
    scanf("%d",&a);
```

```
    printf("Enter value of b\n");
```

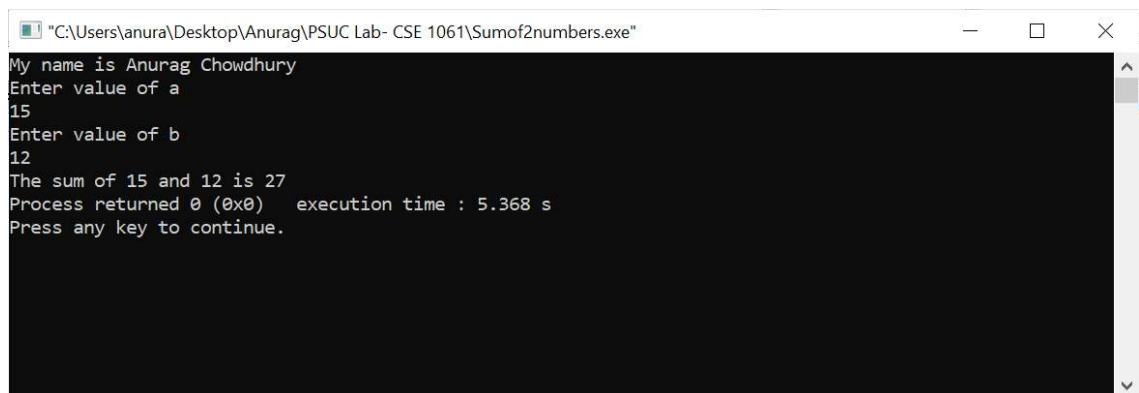
```
    scanf("%d",&b);
```

```
    sum=a+b;
```

```
    printf("The sum of %d and %d is %d",a,b,sum);
```

```
    return 0;
```

```
}
```



```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Sumof2numbers.exe"
My name is Anurag Chowdhury
Enter value of a
15
Enter value of b
12
The sum of 15 and 12 is 27
Process returned 0 (0x0) execution time : 5.368 s
Press any key to continue.
```

2. Write a C program to find the sum, difference, product and quotient of 2 numbers

//Write a C program to find the sum, difference, product and quotient of 2 numbers

```
#include<stdio.h>
```

```
int main(){
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    int a,b;
```

```
    printf("Enter 2 numbers\n");
```

```
    scanf("%d %d",&a,&b);
```

```
    int prod=a*b;
```

```
    int sum=a+b;
```

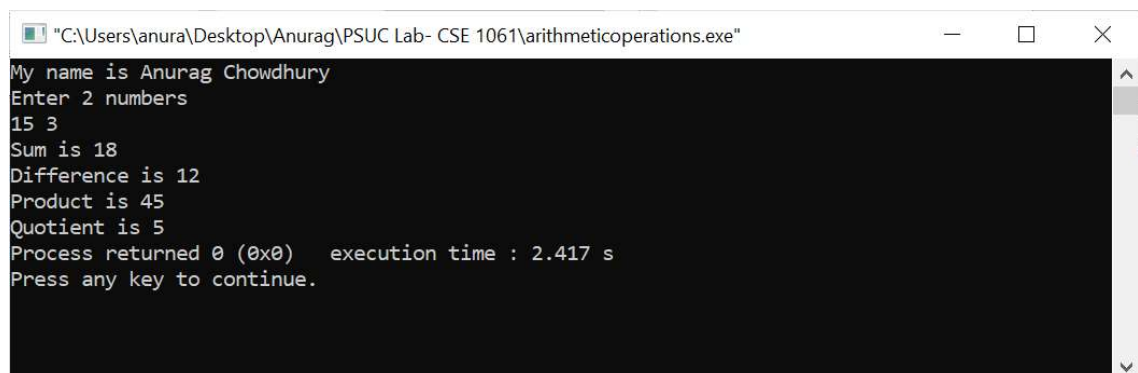
```
    int diff=a-b;
```

```
    int quo=a/b;
```

```
    printf("Sum is %d\nDifference is %d\nProduct is %d\nQuotient is %d",sum,diff,prod,quo);
```

```
    return 0;
```

```
}
```



```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\arithmeticoperations.exe"
My name is Anurag Chowdhury
Enter 2 numbers
15 3
Sum is 18
Difference is 12
Product is 45
Quotient is 5
Process returned 0 (0x0)   execution time : 2.417 s
Press any key to continue.
```

3. Write a C program to print the ASCII value of a character.

```
//Program to print the ASCII value of a character
```

```
#include<stdio.h>
```

```
int main(){
```

```
    char c;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter a character\n");
```

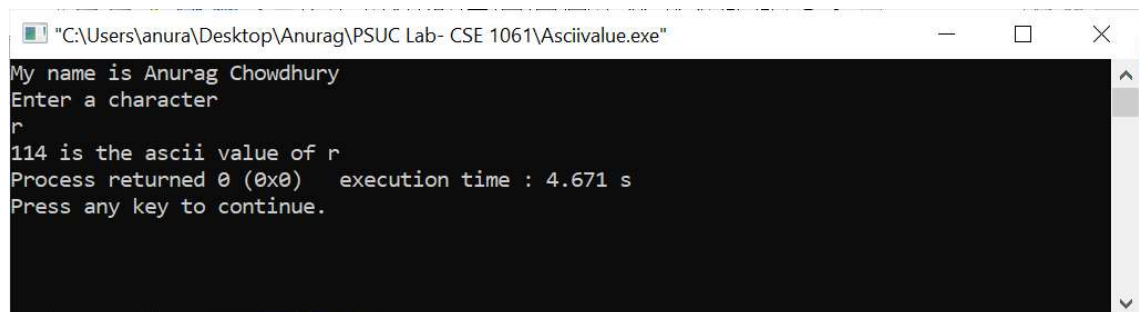
```
    scanf("%c",&c);
```

```
    int asc=c;
```

```
    printf("%d is the ascii value of %c",asc,c);
```

```
    return 0;
```

```
}
```



```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Asciivalue.exe"
My name is Anurag Chowdhury
Enter a character
r
114 is the ascii value of r
Process returned 0 (0x0) execution time : 4.671 s
Press any key to continue.
```

4. Write a C program to display the size of the data type int, char, float, double, long int and long double using size of () operator

```
/*Write a C program to display the size of the data type int, char, float, double, long
```

```
int and long double using size of ( ) operator.*/
```

```
#include<stdio.h>
```

```
int main(){
```

```
    printf("My name is Anurag Chowdhury\n");
```

```

printf("Size of int is %d\n",sizeof(int));

printf("Size of char is %d\n",sizeof(char));

printf("Size of float is %d\n",sizeof(float));

printf("Size of double is %d\n",sizeof(double));

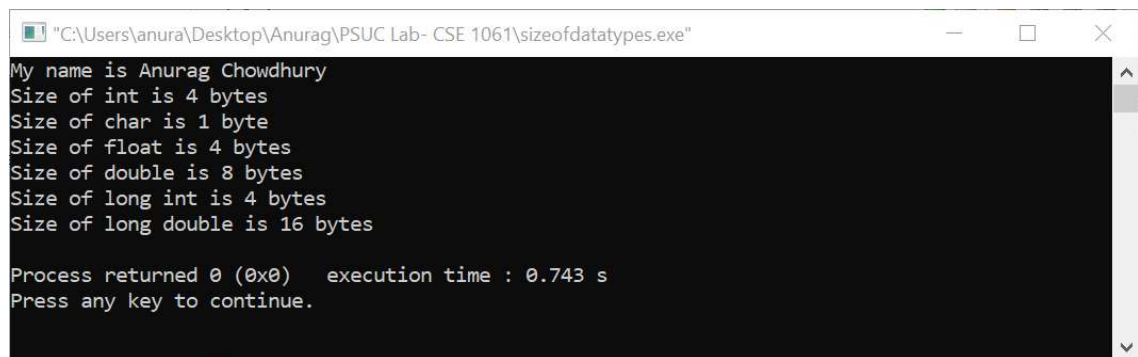
printf("Size of long int is %d\n",sizeof(long int));

printf("Size of long double is %d\n",sizeof(long double));

return 0;

}

```



```

"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\sizeofdatatypes.exe"
My name is Anurag Chowdhury
Size of int is 4 bytes
Size of char is 1 byte
Size of float is 4 bytes
Size of double is 8 bytes
Size of long int is 4 bytes
Size of long double is 16 bytes

Process returned 0 (0x0)   execution time : 0.743 s
Press any key to continue.

```

5. Input P, N and R to compute simple and compound interest.
[Hint: $SI = \frac{PNR}{100}$, $CI = P(1 + \frac{R}{100})^N - P$]

```

/*Input P, N and R to compute simple and compound interest.*/

#include<stdio.h>

#include <math.h>

int main(){

    int p,n;

    float r;

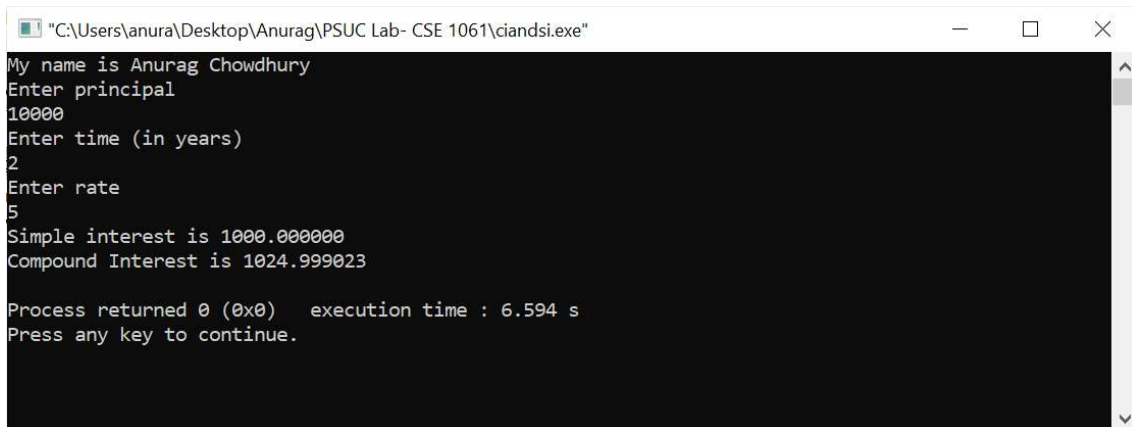
    printf("My name is Anurag Chowdhury\n");

```

```

printf("Enter principal\n");
scanf("%d",&p);
printf("Enter time (in years)");
scanf("%d",&n);
printf("Enter rate");
scanf("%f",&r);
float si=(p*n*r)/100;
float ci=(p*pow((1+r/100),n))-p;
printf("Simple interest is %f\n",si);
printf("Compound Interest is %f\n",ci);
return 0;
}

```



```

C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\ciandsi.exe
My name is Anurag Chowdhury
Enter principal
10000
Enter time (in years)
2
Enter rate
5
Simple interest is 1000.000000
Compound Interest is 1024.999023

Process returned 0 (0x0)   execution time : 6.594 s
Press any key to continue.

```

6. Input radius to find the volume and surface area of a sphere. [Hint: volume = $(4\pi r^3)/3$, Area = $4\pi r^2$]

//Input radius to find the volume and surface area of a sphere.

```
#include<stdio.h>
```

```
#include<math.h>
```

```
int main(){
```

```
    int radius;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```

printf("Enter radius\n");

scanf("%d",&radius);

float area=4*3.14*pow(radius,2)*1.0;

float vol=(4*3.14*pow(radius,3)*1.0)/3;

printf("The surface area of the sphere is %f\n",area);

printf("The surface area of the sphere is %f\n",vol);

return 0;

}

```

```

"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\sphere.exe"
My name is Anurag Chowdhury
Enter radius
12
The surface area of the sphere is 1808.640015
The surface area of the sphere is 7234.560059

Process returned 0 (0x0)   execution time : 3.227 s
Press any key to continue.

```

7. Convert the given temperature in Fahrenheit to Centigrade.

//Convert the given temperature in Fahrenheit to Centigrade

```
#include<stdio.h>
```

```
int main(){
```

```
    int ftemp;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter temperature in Fahrenheit\n");
```

```
    scanf("%d",&ftemp);
```

```
    float c=(5*1.0/9)*(ftemp-32);
```

```
    printf("Temperature in Fahrenheit is %f",c);
```

```
    return 0;
```

}

8. Write a C program to evaluate the following expression for the values $a = 30$, $b=10$, $c=5$, $d=15$

/*Write a C program to evaluate the following expression for the values $a = 30$,
 $b=10$, $c=5$, $d=15$ */

#include<stdio.h>

int main(){

int a=30,b=10,c=5,d=15;

printf("My name is Anurag Chowdhury\n");

float exp1=(a+b)*c*1.0/d;

float exp2=((a+b)*c)*1.0/d;

float exp3=a+(b*c)*1.0/d;

float exp4=(a+b)*(c*1.0/d);

printf("Result of $(a+b)*c/d$ is %f\n",exp1);

printf("Result of $((a+b)*c)/d$ is %f\n",exp2);

printf("Result of $a+(b*c)/d$ is %f\n",exp3);

printf("Result of $(a+b)*(c/d)$ is %f\n",exp4);

return 0;

}

```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 1\expression.exe"
My name is Anurag Chowdhury
Result of (a+b)*c/d is 13.333333
Result of ((a+b)*c)/d is 13.333333
Result of a+(b*c)/d is 33.333332
Result of (a+b)*(c/d) is 13.333333

Process returned 0 (0x0)   execution time : 0.324 s
Press any key to continue.
```


LAB 2 Programs

1. Check whether the given number is odd or even

//Check whether the given number is odd or even

```
#include<stdio.h>
```

```
int main(){
```

```
    int n;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter a number\n");
```

```
    scanf("%d",&n);
```

```
    if(n%2==0)
```

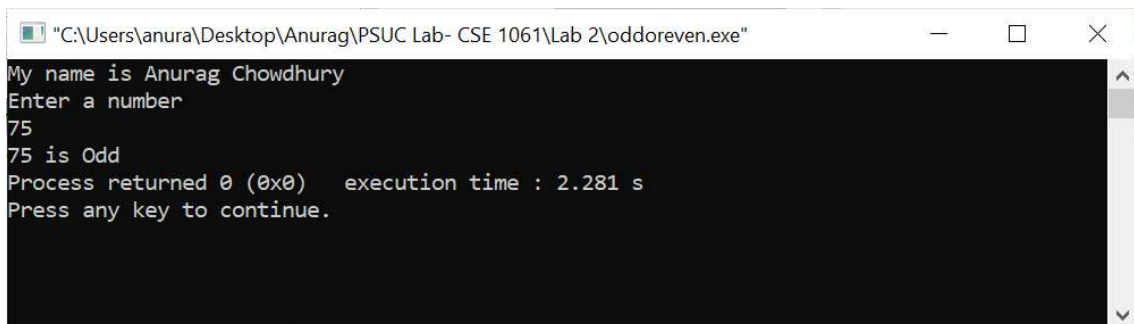
```
        printf("%d is Even",n);
```

```
    else
```

```
        printf("%d is Odd",n);
```

```
    return 0;
```

```
}
```



```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 2\odddoreven.exe"
My name is Anurag Chowdhury
Enter a number
75
75 is Odd
Process returned 0 (0x0)   execution time : 2.281 s
Press any key to continue.
```

2. Find the largest among given 3 numbers

//Find the largest among given 3 numbers

```
#include<stdio.h>
```

```
int main(){
```

```
    int a,b,c;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter 3 numbers\n");
```

```
    scanf("%d %d %d",&a,&b,&c);
```

```
    int max;
```

```
    if(a>=b){
```

```
        if(a>=c)
```

```
            max=a;
```

```
        else
```

```
            max=c;
```

```
    }
```

```
    else if(b>=a){
```

```
        if(c>=b)
```

```
            max=c;
```

```
        else
```

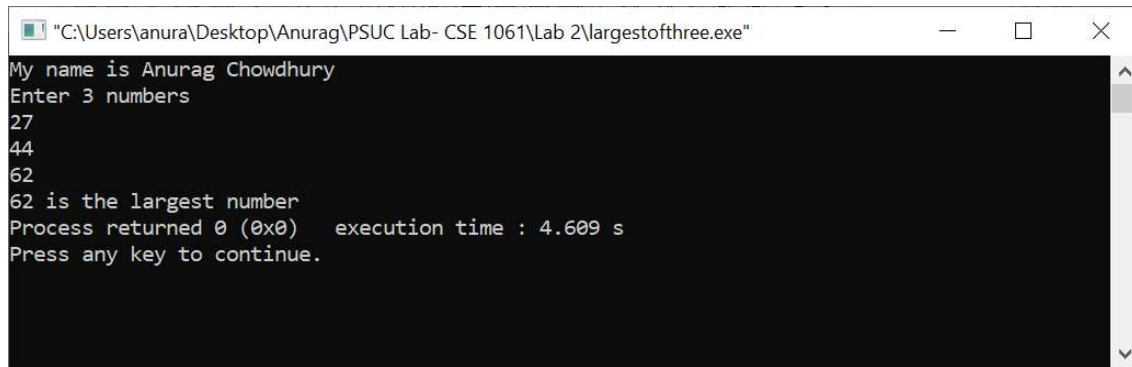
```
            max=b;
```

```
    }
```

```
    printf("%d is the largest number",max);
```

```
    return 0;
```

```
}
```



```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 2\largestofthree.exe"
My name is Anurag Chowdhury
Enter 3 numbers
27
44
62
62 is the largest number
Process returned 0 (0x0) execution time : 4.609 s
Press any key to continue.
```

3. Swap two numbers without using third variable.

//Swap two numbers without using third variable.

```
#include<stdio.h>
```

```
int main(){
```

```
    int a,b;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter value of a\n");
```

```
    scanf("%d",&a);
```

```
    printf("Enter value of b\n");
```

```
    scanf("%d",&b);
```

```
    printf("Value of a before swapping is %d\n",a);
```

```
    printf("Value of b before swapping is %d\n",b);
```

```
    a=a+b;
```

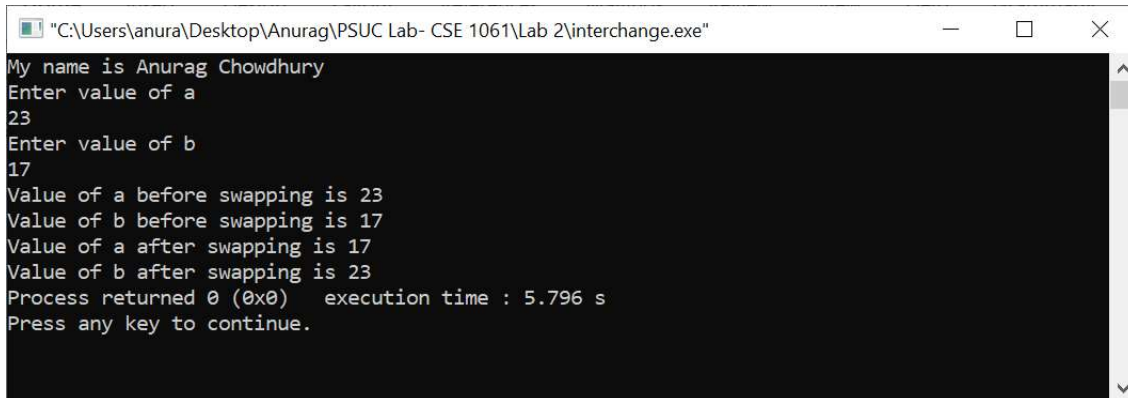
```
    b=a-b;
```

```
    a=a-b;
```

```
    printf("Value of a after swapping is %d",a);
```

```
    printf("\nValue of b after swapping is %d",b);
```

```
        return 0;
    }
}
```



```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 2\interchange.exe"
My name is Anurag Chowdhury
Enter value of a
23
Enter value of b
17
Value of a before swapping is 23
Value of b before swapping is 17
Value of a after swapping is 17
Value of b after swapping is 23
Process returned 0 (0x0)   execution time : 5.796 s
Press any key to continue.
```

4. Compute all the roots of a quadratic equation using switch case statement.

//Compute all the roots of a quadratic equation using switch case statement.

```
#include<stdio.h>
```

```
#include<math.h>
```

```
int main(){
```

```
    int a,b,c;
```

```
    float x1,x2;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter value of constants in ax^2+bx+c\n");
```

```
    printf("Enter value of a\n");
```

```
    scanf("%d",&a);
```

```
    printf("Enter value of b\n");
```

```
    scanf("%d",&b);
```

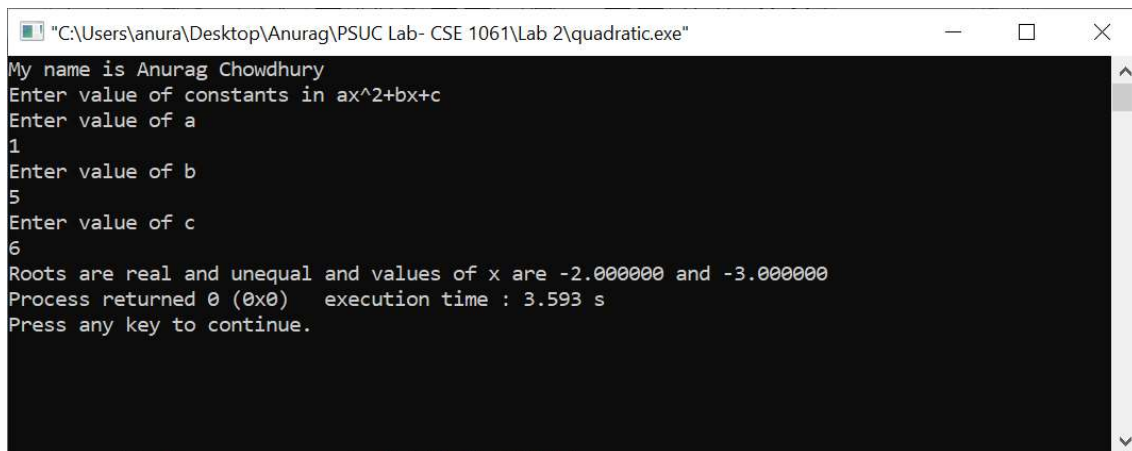
```
    printf("Enter value of c\n");
```

```
    scanf("%d",&c);
```

```

float d=pow(b,2)-4*a*c;
int flag;
if(d<0)
    flag=1;
else if(d>0)
    flag=2;
else
    flag=3;
switch(flag){
    case 1:
        printf("No real roots");
        break;
    case 2:
        x1=(-b+pow(d,0.5))*1.0/(2*a);
        x2=(-b-pow(d,0.5))*1.0/(2*a);
        printf("Roots are real and unequal and values of x are %f
and %f",x1,x2);
        break;
    case 3:
        x1=(-b*1.0)/(2*a);
        printf("Roots are real and equal and its value is %f",x1);
        break;
    default:
        printf("Invalid choice");
}
return 0;
}

```



```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 2\quadratic.exe"
My name is Anurag Chowdhury
Enter value of constants in ax^2+bx+c
Enter value of a
1
Enter value of b
5
Enter value of c
6
Roots are real and unequal and values of x are -2.000000 and -3.000000
Process returned 0 (0x0)   execution time : 3.593 s
Press any key to continue.
```

5. Write a program that will read the value of x and evaluate the following function(signum function)

//Write a program that will read the value of x and evaluate the following function(signum function)

```
#include<stdio.h>
```

```
int main(){
```

```
    int x,y;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter value of x\n");
```

```
    scanf("%d",&x);
```

```
    if(x>0){
```

```
        y=1;
```

```
    }
```

```
    else if(x<0){
```

```
        y=-1;
```

```
    }
```

```
    else{
```

```

        y=0;
    }

    printf("Value of y is %d",y);

    return 0;
}

```

```

C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 2\function.exe
My name is Anurag Chowdhury
Enter value of x
-7
Value of y is -1
Process returned 0 (0x0) execution time : 2.906 s
Press any key to continue.

```

6. Find the smallest among three numbers using conditional operator.

//Find the smallest among three numbers using conditional operator.

```
#include<stdio.h>
```

```
int main(){
```

```
    int x,y,z;
```

```
    printf("My name is Anurag Chowdhury\n");
```

```
    printf("Enter values of x,y and z\n");
```

```
    printf("Enter value of x\n");
```

```
    scanf("%d",&x);
```

```
    printf("Enter value of y\n");
```

```
    scanf("%d",&y);
```

```
    printf("Enter value of z\n");
```

```
    scanf("%d",&z);
```

```
    int min=(x<y)?((x<z)?x:z):(y<z?y:z);
```

```
printf("Smallest of %d,%d,%d is %d",x,y,z,min);  
}
```

```
"C:\Users\anura\Desktop\Anurag\PSUC Lab- CSE 1061\Lab 2\ternary.exe"  
My name is Anurag Chowdhury  
Enter values of x,y and z  
Enter value of x  
12  
Enter value of y  
22  
Enter value of z  
34  
Smallest of 12,22,34 is 12  
Process returned 0 (0x0) execution time : 3.169 s  
Press any key to continue.
```