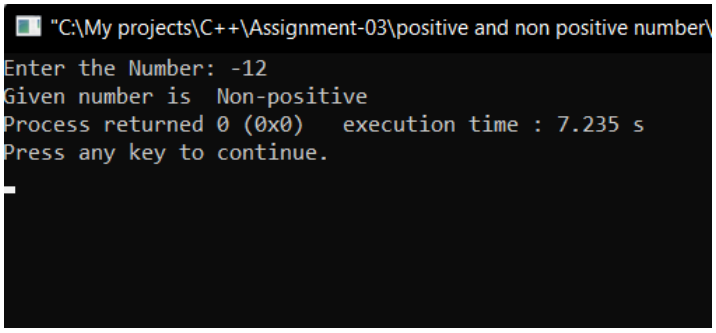
# Assignment-3

## Decision control statements

**1.** A program to check whether a given number is positive or non-positive.

```
#include <stdio.h>


int main()
{
   int x;
   printf("Enter the Number: ");
   scanf("%d",&x);
   printf("Given number is  ");
   if(x>0)
   {
      printf("Positive");
   }
   else
   {
      printf("Non-positive");
   }
   return 0;
}
```

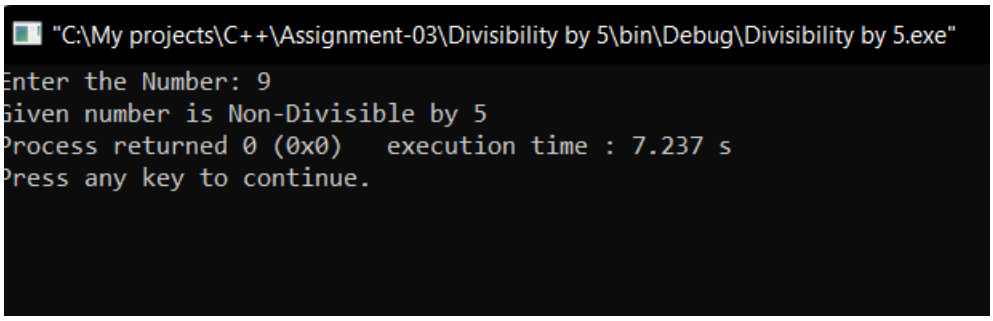
OUTPUT:



2. program to check whether a given number is divisible by 5 or not.

```
#include <stdio.h>
int main()
{
   int x;
   printf("ENter the Number: ");
   scanf("%d",&x);
   printf("Given number is ");
   if(x%5==0)
   {
      printf("Divisible by 5");
   }
   else
   {
      printf("Non-Divisible by 5");
   }
   return 0;
}
```

OUTPUT:

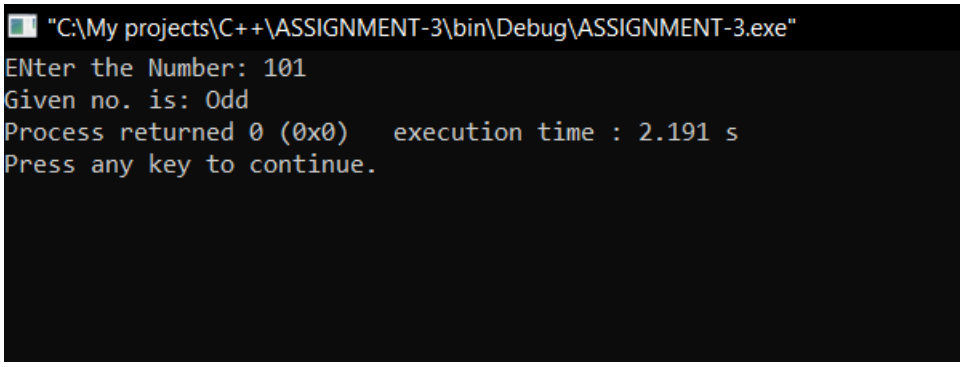



3. program to check whether a given number is an even number or an odd number.

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

```
    int x;
    printf("ENter the Number: ");
    scanf("%d",&x);
    printf("Given no. is: ");
    if(x%2==0)
    {
       printf("Even");
    }
    else
    {
       printf("Odd");
    }
    return 0;
}
```

OUTPUT:

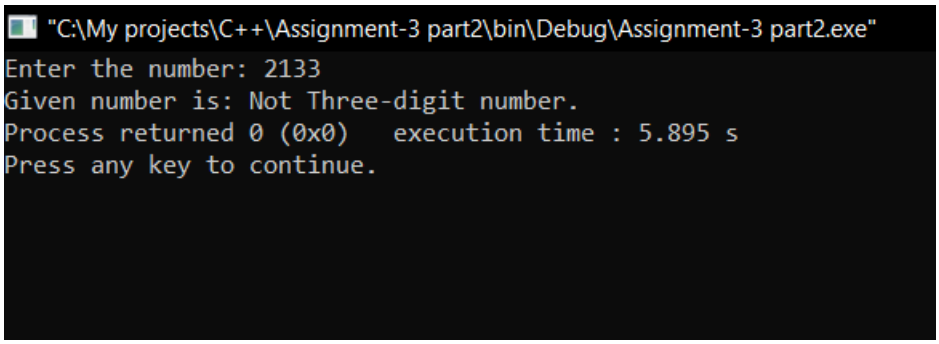



4. A program to check whether a given number is a three-digit number or not.

```
#include<stdio.h>
int main()
  {
     int x,y;
     printf("Enter the number: ");
     scanf("%d",&x);
     printf("Given number is: ");
     if(x/100)
     {
       y=x/100;
```

```
        if(y>9)
        {printf("Not Three-digit number.");}
        else
        {
            printf("Three-digit number.");
        }
    }

    else
     {
        printf("Not Three-digit number");
     }
    return 0;

 }
```

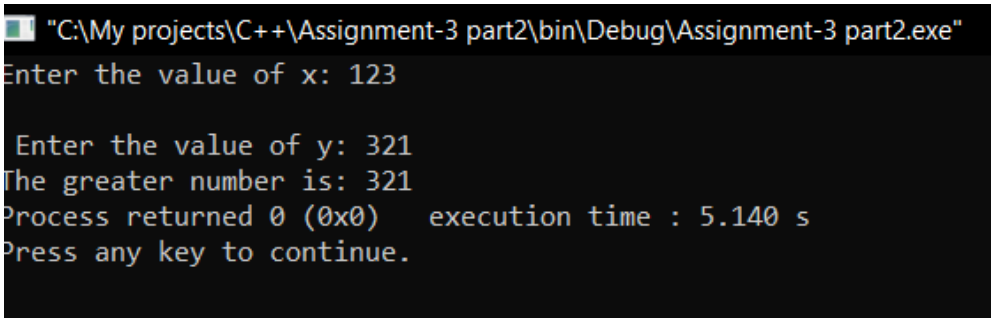
OUTPUT:




5. Program to print greater between two numbers. Print one number of both are the same.

```
#include<stdio.h>
int main()
{
    int x,y;
   printf("Enter the value of x: ");
   scanf("%d",&x);
   printf("\n Enter the value of y: ");
   scanf("%d",&y);
   printf("The greater number: %d",x>y?x:y);

}
```

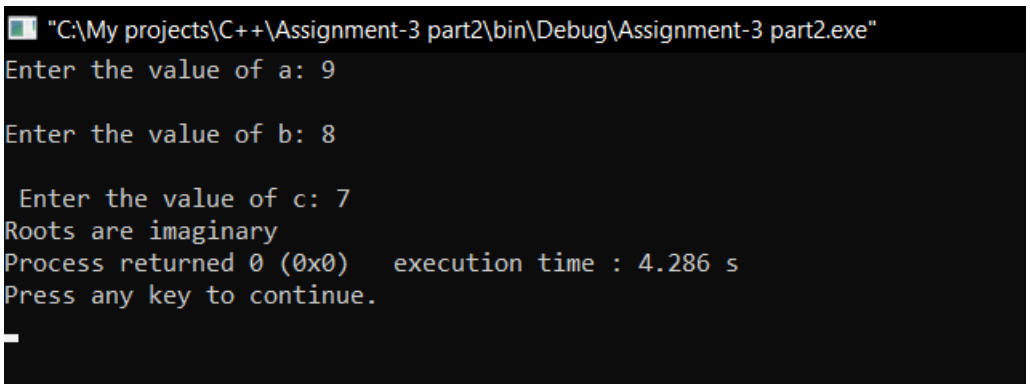
OUTPUT:




6. Write a program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginary roots.

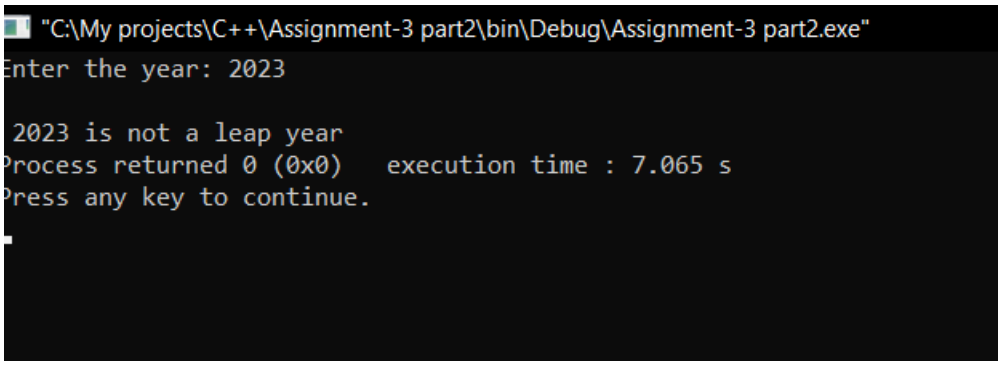
```
#include<stdio.h>
int main()
{
    int a,b,c,D;
   printf("Enter the value of a: ");
   scanf("%d",&a);
   printf("\nEnter the value of b: ");
   scanf("%d",&b);
   printf("\n Enter the value of c: ");
   scanf("%d",&c);
   D=b*b-4*a*c;
   D==0?printf("Roots are Real and equal"):D>0?printf("Roots are Real and distinct"):printf("Roots are imaginary");
   return 0;
}
```

OUTPUT:




7. Write a program to check whether a given year is a leap year or not.

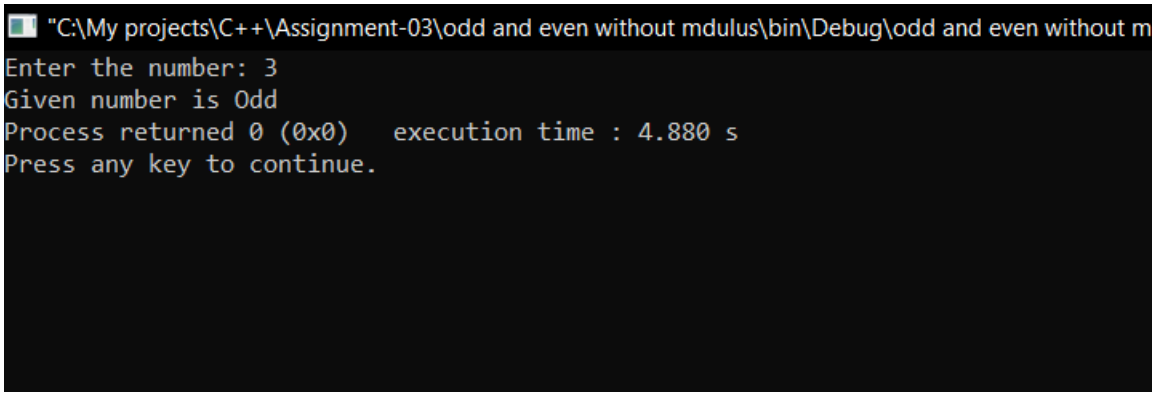
```
#include<stdio.h>
int main()
{
    int y,leap;
   printf("Enter the year: ");
   scanf("%d",&y);
   leap=y%4;
   if(leap) printf("\n %d is not a leap year",y);
   else printf("\n %d is a leap year",y);
   return 0;
}OUTPUT:
```




8. program to check whether a given number is an even number or an odd number without using % operator.

```
#include <stdio.h>


int main()
{
   int x,q,r;
   printf("Enter the number: ");
   scanf("%d",&x);
   printf("Given number is ");
   q=x/2;
   r=x-2*q;
   if(r) printf("Odd");
   else printf("Even");
   return 0;
}
```

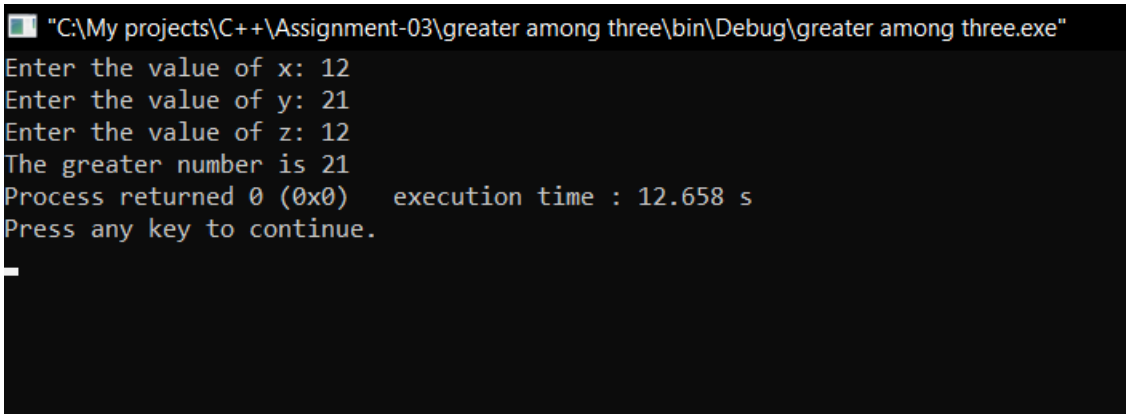
Output:




9. Write a program to find the greatest among three given numbers. Print number once if the greatest number appears two or three times.

```
#include<stdio.h>
int main()
{
    int x,y,z;
    printf("Enter the value of x: ");
    scanf("%d",&x);
    printf("Enter the value of y: ");
    scanf("%d",&y);
    printf("Enter the value of z: ");
     scanf("%d",&z);
     printf("The greater number is ");
        if(x>y&&x>z) printf("%d",x);
            else if(y>z) printf("%d",y);
            else            printf("%d",z);

   return 0;
}
```

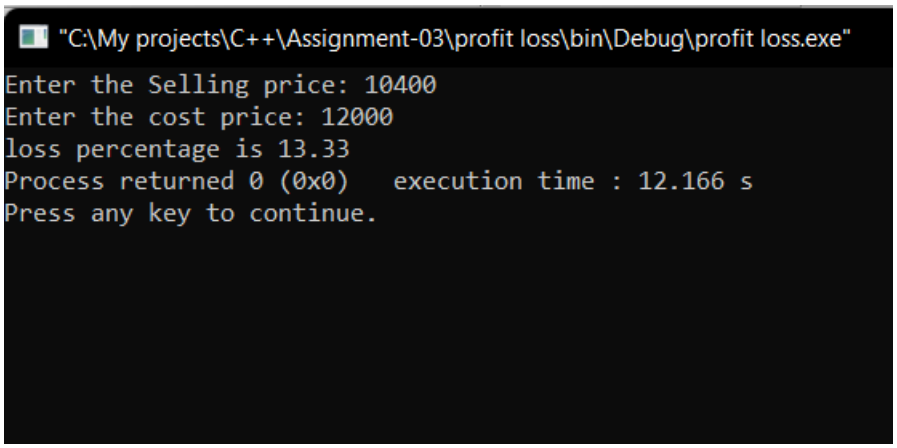
OUTPUT:



10. Write a program which takes the cost price and selling price of a product from the user. Now calculate and print profit or loss percentage.

```
#include <stdio.h>



int main()
{
   float sp,cp,pl,per;
   printf("Enter the Selling price: ");
   scanf("%f",&sp);
   printf("Enter the cost price: ");
   scanf("%f",&cp);
   pl=sp-cp;
   per=pl/cp*100;
   if(pl>0) printf("Profit percentage is %.2f",per);
   else      printf("loss percentage is %.2f",-1*per);


   return 0;
}
```

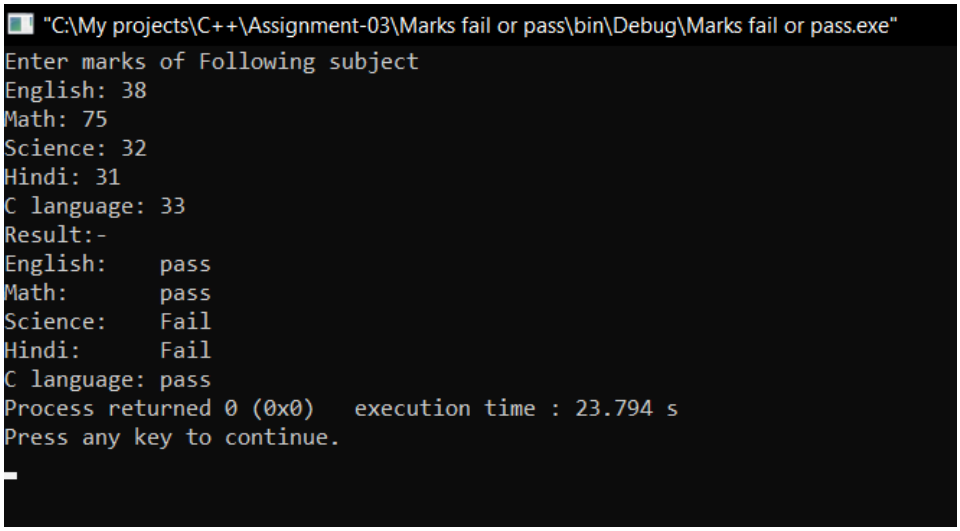
OUTPUT:



11. Write a program to take marks of 5 subjects from the user. Assume marks are given out of 100 and passing marks is 33. Now display whether the candidate passed the examination or failed.

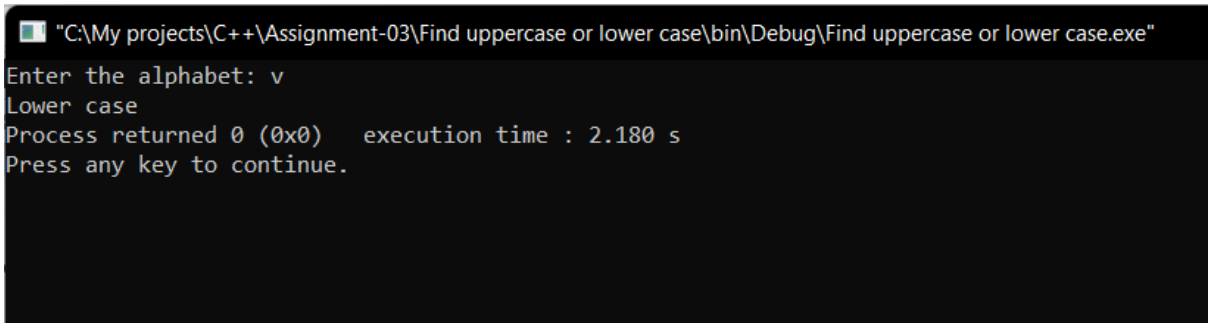
```
#include<stdio.h>

 int main()

 {

    int e,m,s,h,c;

    printf("Enter marks of Following subject");

    printf("\nEnglish: ");scanf("%d",&e);

    printf("Math: ");   scanf("%d",&m);

    printf("Science: ");scanf("%d",&s);

    printf("Hindi: ");  scanf("%d",&h);

    printf("C language: ");scanf("%d",&c);

    printf("Result:-\n");

    printf("English:    ");      e>=33?printf("pass"):printf("Fail");

    printf("\nMath:       ");       m>=33?printf("pass"):printf("Fail");

    printf("\nScience:    ");    s>=33?printf("pass"):printf("Fail");

    printf("\nHindi:      ");      h>=33?printf("pass"):printf("Fail");

    printf("\nC language: "); c>=33?printf("pass"):printf("Fail");

    return 0;

 }
```

OUTPUT:



12. Write a program to check whether a given alphabet is in uppercase or lowercase.

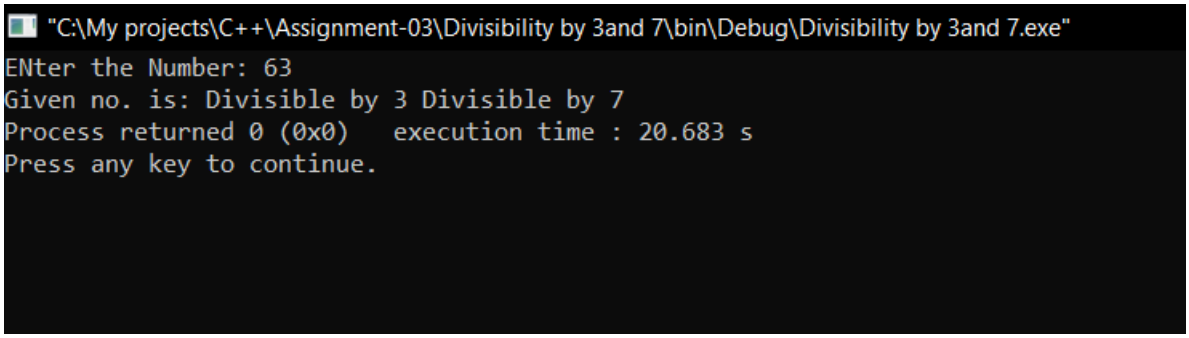
```
#include<stdio.h>
int main()
   {
      char x;
      printf("Enter the alphabet: ");
      scanf("%c",&x);
      if('a'<=x&&x<='z') printf("Lower case");
      if('A'<=x&&x<='Z') printf("Upper case");
      return 0;
   }
```




13. Write a program to check whether a given number is divisible by 3 and divisible by 7.

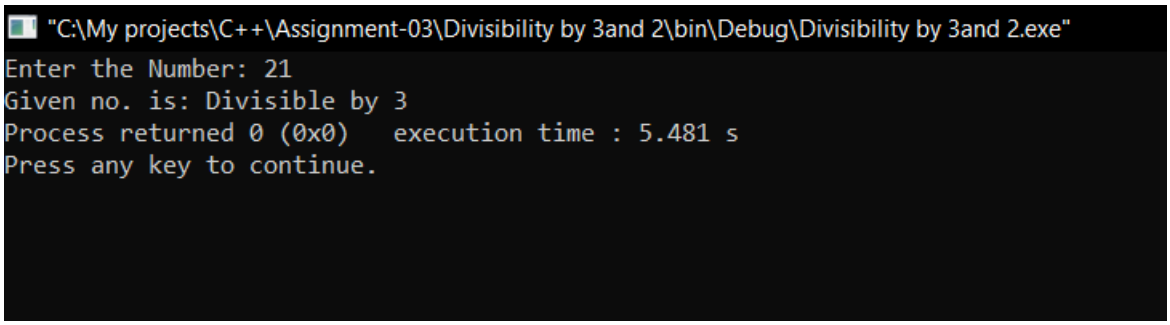
```
#include <stdio.h>
int main()
{
   int x;
   printf("ENter the Number: ");
   scanf("%d",&x);
   printf("Given no. is: ");
   if(x%3==0) printf("Divisible by 3 ");
   if(x%7==0) printf("Divisible by 7");
   else if(x%3) printf("Neither by 3 nor divisible by 7");
   return 0;
```

}




14. Write a program to check whether a given number is divisible by 2 or divisible by 3.

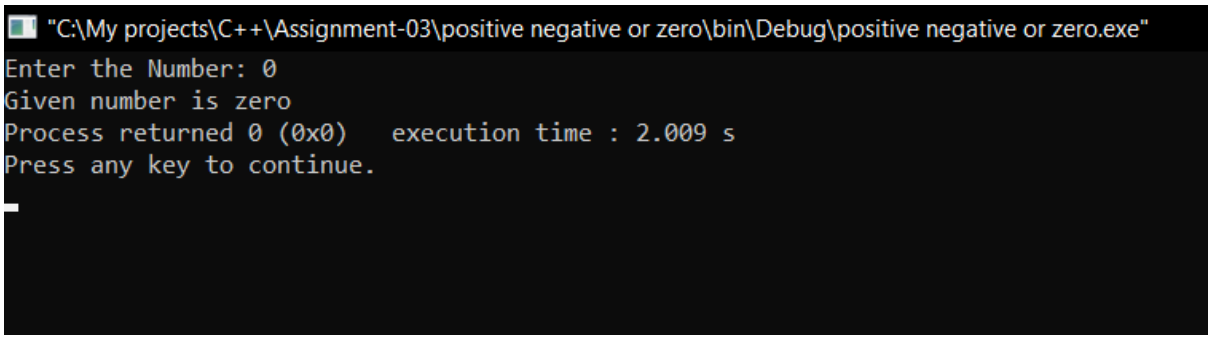
```
#include <stdio.h>
int main()
{
   int x;
   printf("Enter the Number: ");
   scanf("%d",&x);
   printf("Given no. is: ");
   if(x%2==0) printf("Divisible by 2 ");
   if(x%3==0) printf("Divisible by 3");
   else if(x%2) printf("Neither by 3 nor divisible by 2");
   return 0;
}
```




15. Write a program to check whether a given number is positive, negative or zero.

```
#include <stdio.h>

int main()
```

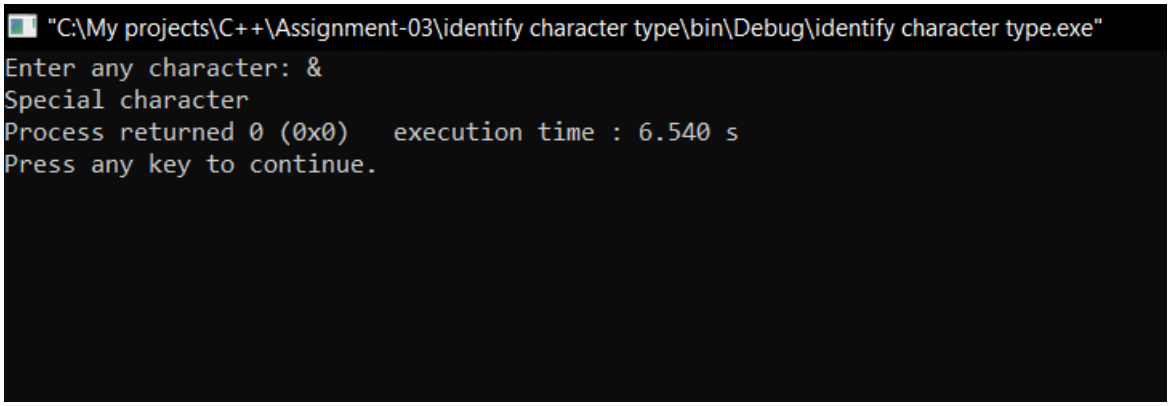
```
{
   int x;
   printf("Enter the Number: ");
   scanf("%d",&x);
   printf("Given number is ");
   if(x>0)  printf("Positive");
   else if(x<0) printf("Negative");
   else printf("zero");
   return 0;
}
```




16. Write a program to check whether a given character is an alphabet (uppercase), an alphabet (lower case), a digit or a special character.

```
#include<stdio.h>
int main()
   {
      char x;
      printf("Enter any character: ");
      scanf("%c",&x);
      if('a'<=x&&x<='z') printf("Lower case");
      else if('A'<=x&&x<='Z') printf("Upper case");
      else if('0'<=x&&x<='9') printf("digit");
      else printf("Special character");
      return 0;
   }
```

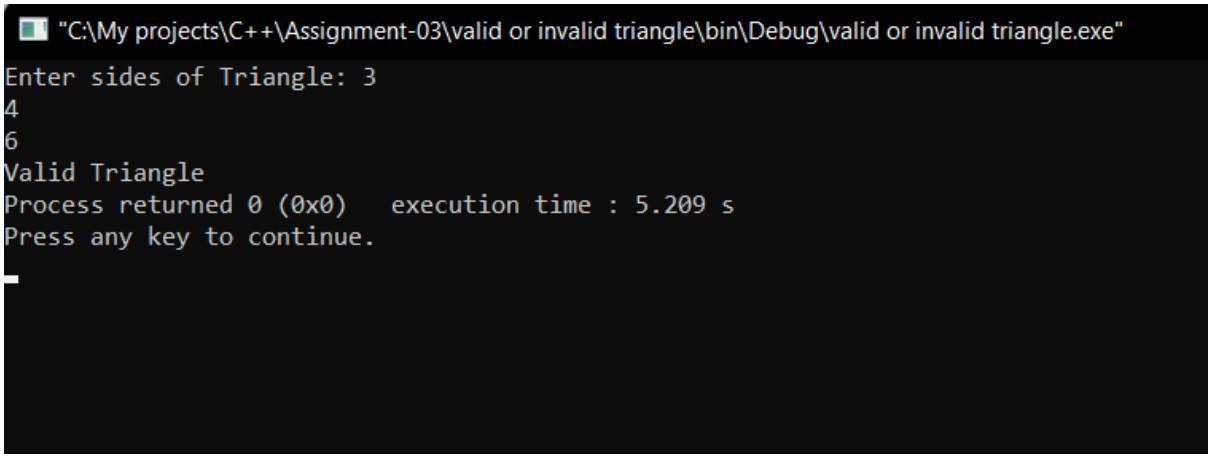
OUTPUT:




17. Write a program which takes the length of the sides of a triangle as an input. Display whether the triangle is valid or not.

```
#include<stdio.h>

int main()

  {

     int a,b,c;

     printf("Enter sides of Triangle: ");

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

     if(a+b>c&&b+c>a&&a+c>b)  printf("Valid Triangle");

     else printf("Invalid Triangle");

     return 0;

  }
```

OUTPUT:



18. Write a program which takes the month number as an input and display number of days in that month*/

```
#include<stdio.h>
int main()
{
   int x;
   printf("Enter the month number\n");
   scanf("%d",&x);
   if(x%2)
   {
     if(x<=7) printf("31 days"); else printf("30 days");printf("\n");
   }
   else
   {
     if(x>=8) printf("31 days \n"); else if(x>2) printf("30 days \n");
   else printf("28 days \n");


   }
return 0;
}
```

OUTPUT :