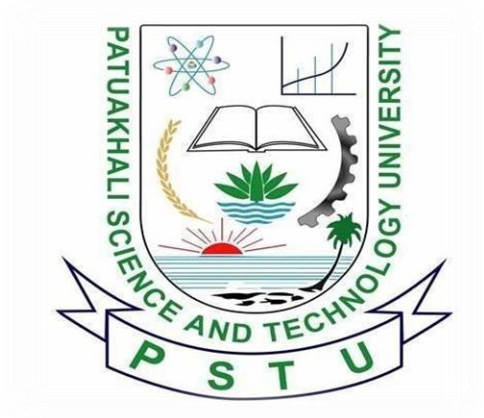
PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY



COURSE CODE 112

SUBMITTED TO:

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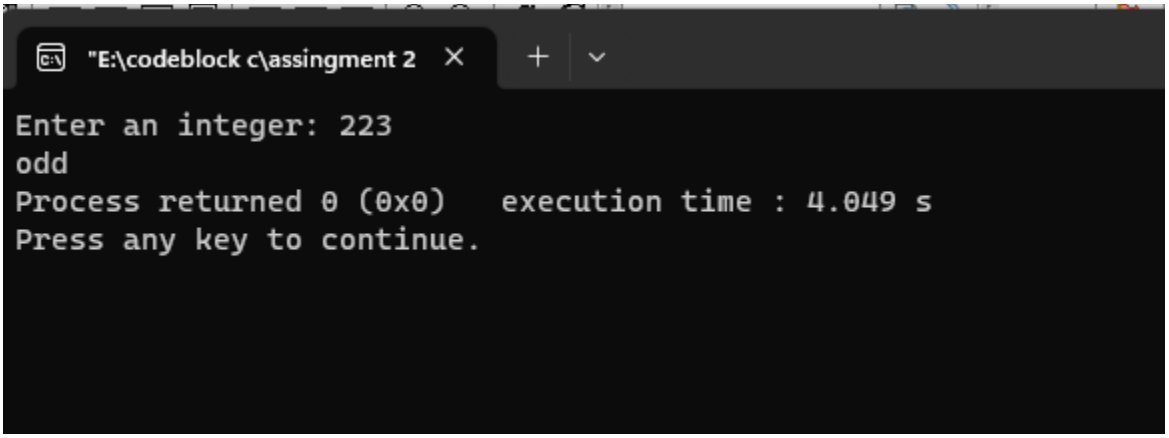
Date of submission: 31-3-2023

Programming Exercise

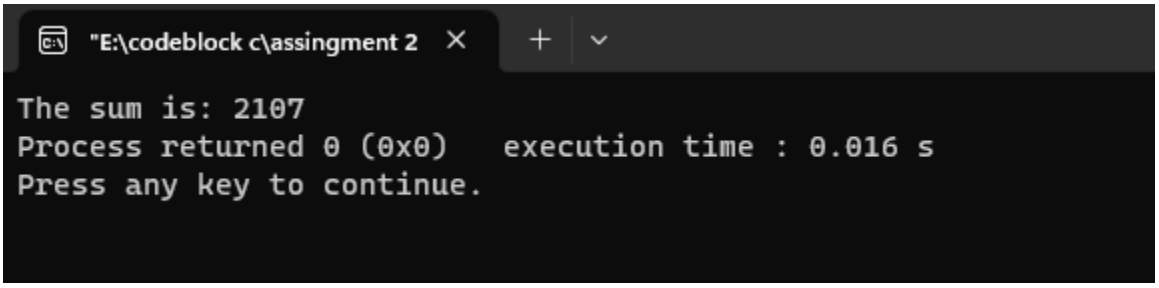
6.1 Even or Odd

```
#include<stdio.h>
int main()
{   int num;
    printf("Enter an integer: ");
    scanf("%d",&num);
    if(num%2==0)
        printf("Even");
    else if(num!=0)
        printf("odd");
        else
            printf("the number is 0");
    return 0;
}
```



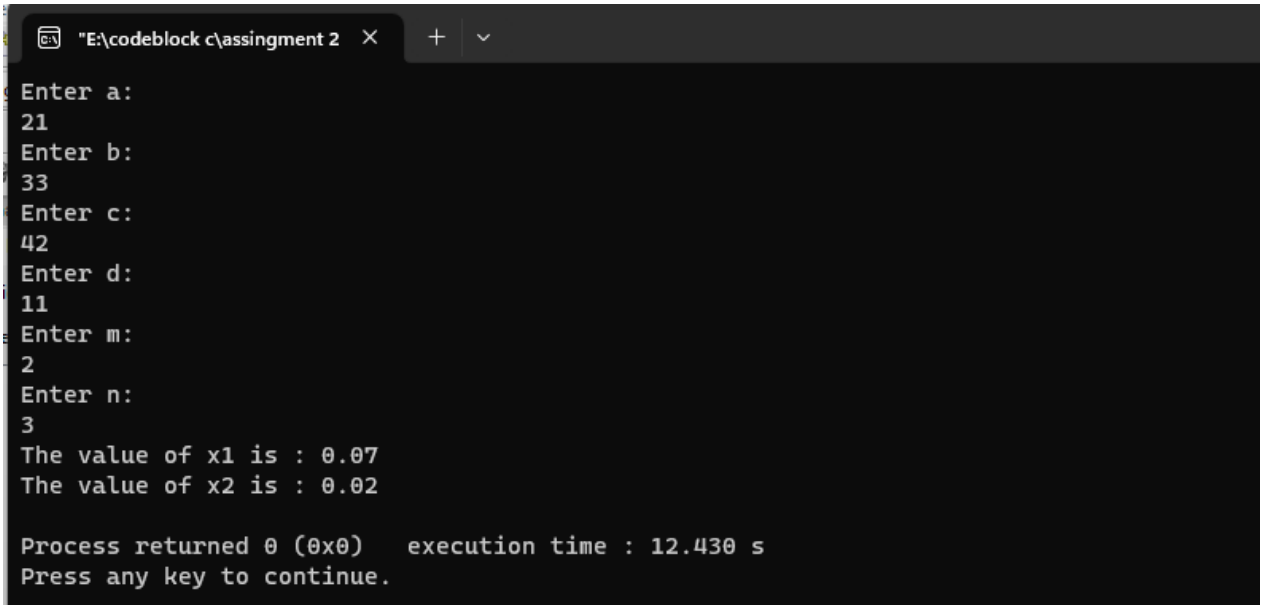
6.2 sum of all integers greater than 100 and less than 200 that are divisible by 7.

```
#include<stdio.h>
int main()
{
   int sum=0,n=200,i;
   for(i=101;i<n;i++)
   {
      if(i%7==0)
      {
         sum=sum+i;
      }
   }

   printf("The sum is: %d",sum);
}
```



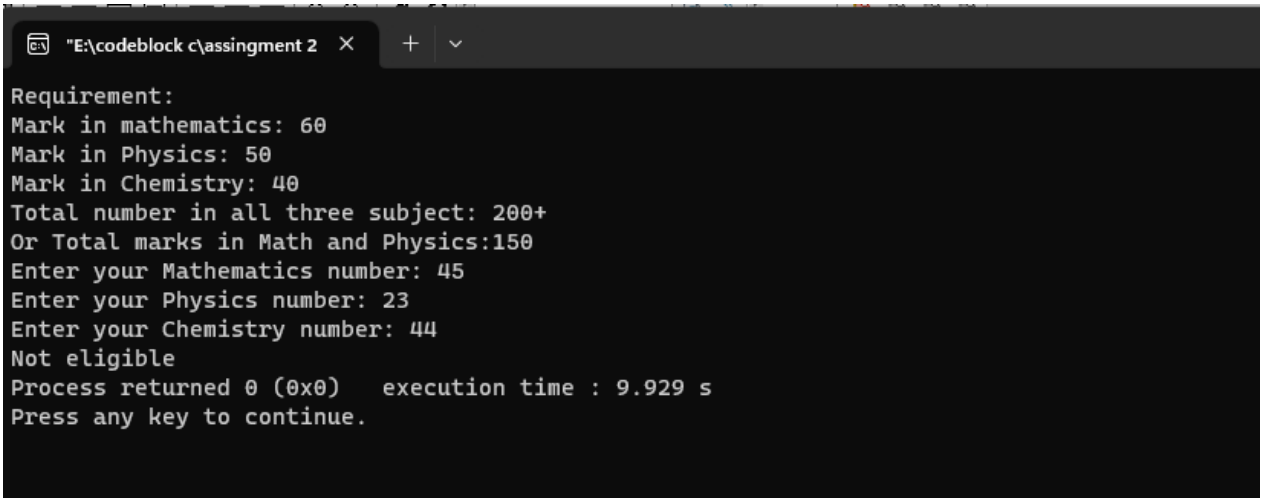
6.3 two linear equations with two unknowns x1 and x2

```
#include<stdio.h>
int main()
{
   float a,b,c,d,m,n,x1,x2;
   printf("Enter a: \n");
   scanf("%f",&a);
   printf("Enter b: \n");
   scanf("%f",&b);
   printf("Enter c: \n");
   scanf("%f",&c);
   printf("Enter d: \n");
   scanf("%f",&d);
   printf("Enter m: \n");
   scanf("%f",&m);
   printf("Enter n: \n");
   scanf("%f",&n);
   x1=((m*d-b*n)/(a*d-c*b));
   x2=((n*a-m*c)/(a*d-c*b));
   printf("The value of x1 is : %0.2f\n",x1);
   printf("The value of x2 is : %0.2f\n",x2);


}
```



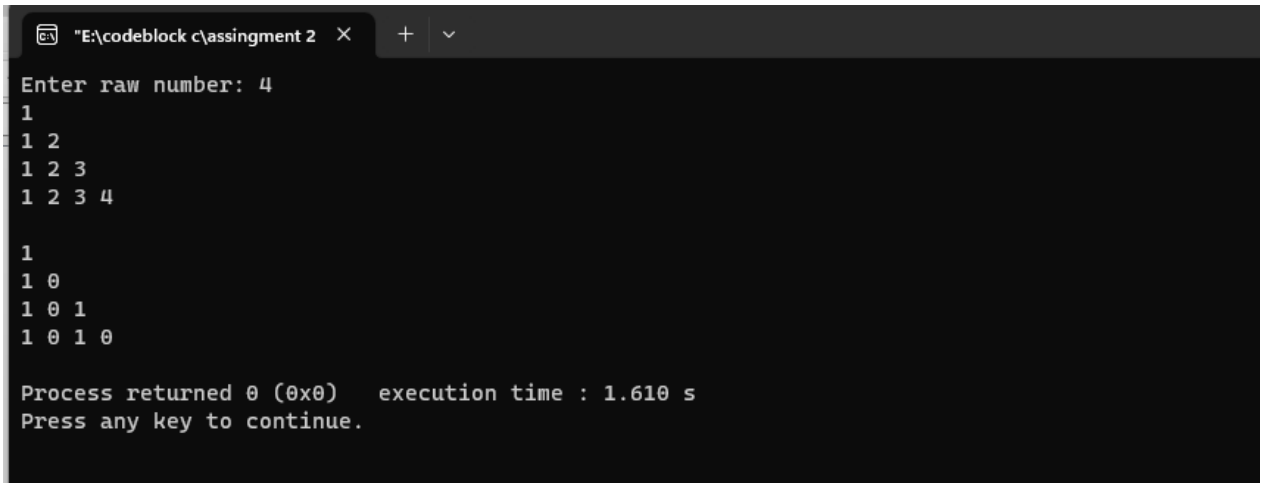
6.4 Admission to a professional course is subject

```
#include<stdio.h>
int main()
{
   int m,p,c,s,mp;
   printf("Requirement:\n");
   printf("Mark in mathematics: 60\nMark in Physics: 50\nMark in Chemistry: 40\nTotal number in all three subject: 200+\nOr Total marks in Math and Physics:150 \n");
   printf("Enter your Mathematics number: ");
   scanf("%d",&m);
   printf("Enter your Physics number: ");
   scanf("%d",&p);
   printf("Enter your Chemistry number: ");
   scanf("%d",&c);
   s=p+c+m;
   mp=m+p;
   if(m>=60 && p>=50 && c>=40)
   {
      if(s>=200 || mp>=150)
      {
         printf("You are eligible candidate");
      }
   }
   else
      printf("Not eligible");
}
```


"E:\codeblock c\assingment 2
Requirement:
Mark in mathematics: 60
Mark in Physics: 50
Mark in Chemistry: 40
Total number in all three subject: 200+
Or Total marks in Math and Physics:150
Enter your Mathematics number: 45
Enter your Physics number: 23
Enter your Chemistry number: 44
Not eligible
Process returned 0 (0x0)   execution time : 9.929 s
Press any key to continue.

6.7 Pattern

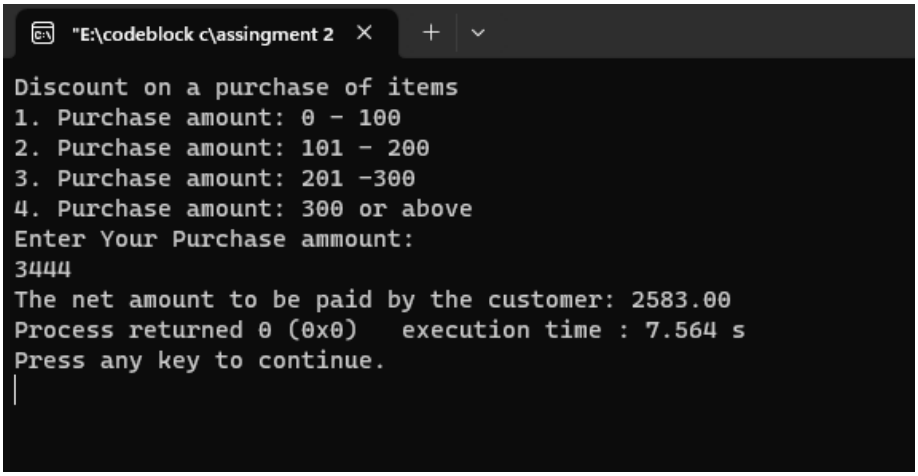
```
#include<stdio.h>
int main()
{
   int n,r,c;
   printf("Enter raw number: ");
   scanf("%d",&n);
   for(r=1;r<=n;r++)
   {
      for(c=1;c<=r;c++)
      {
         printf("%d ",c);
      }
      printf("\n");
      }
      printf("\n");
         for(r=1;r<=n;r++)
   {
      for(c=1;c<=r;c++)
      {
         printf("%d ",c%2);
      }
      printf("\n");
   }


}
```



6.8 seasonal discounts on purchase of items

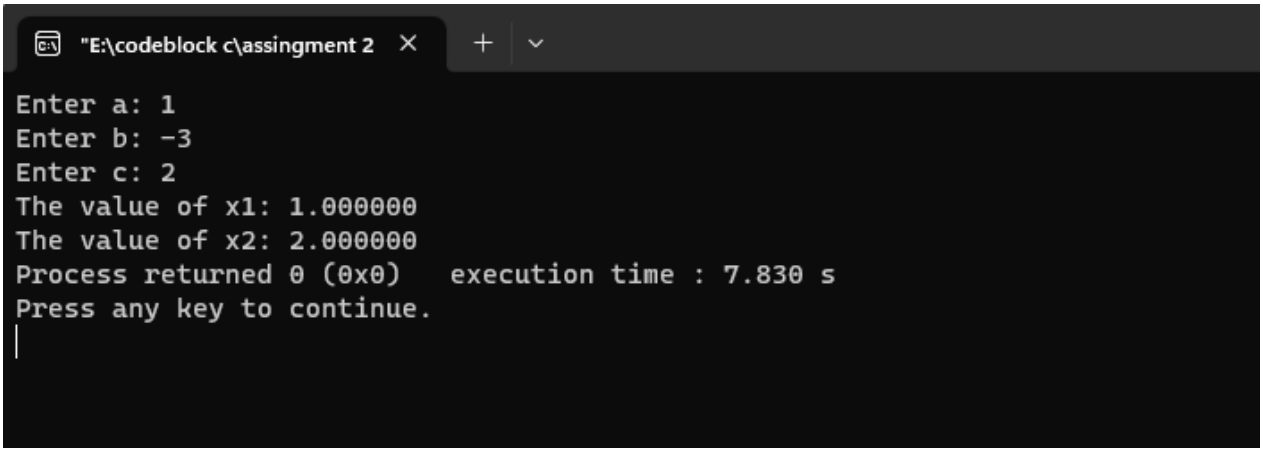
```
#include<stdio.h>
int main()
{
   float ch,p;
   int n;
   printf("Discount on a purchase of items\n");
   printf("1. Purchase amount: 0 - 100\n2. Purchase amount: 101 - 200\n3. Purchase amount:
201 -300\n4. Purchase amount: 300 or above\n");
   printf("Enter Your Purchase ammount: \n");
   scanf("%f",&ch);
   if(ch>=0 && ch<=100)
   {
     p=ch-ch*0.05;
   }
   else if(ch>=101 && ch<=200)
{
      p=ch-ch*0.125;
      }
   else if(ch>=201 && ch<=300)
  {
        p=(ch-(ch*0.175));
      }
   else if(ch>=301)

      {
        p=(ch-(ch*0.25));
```

```
    }
  printf("The net amount to be paid by the customer: %0.2f",p);
}
```



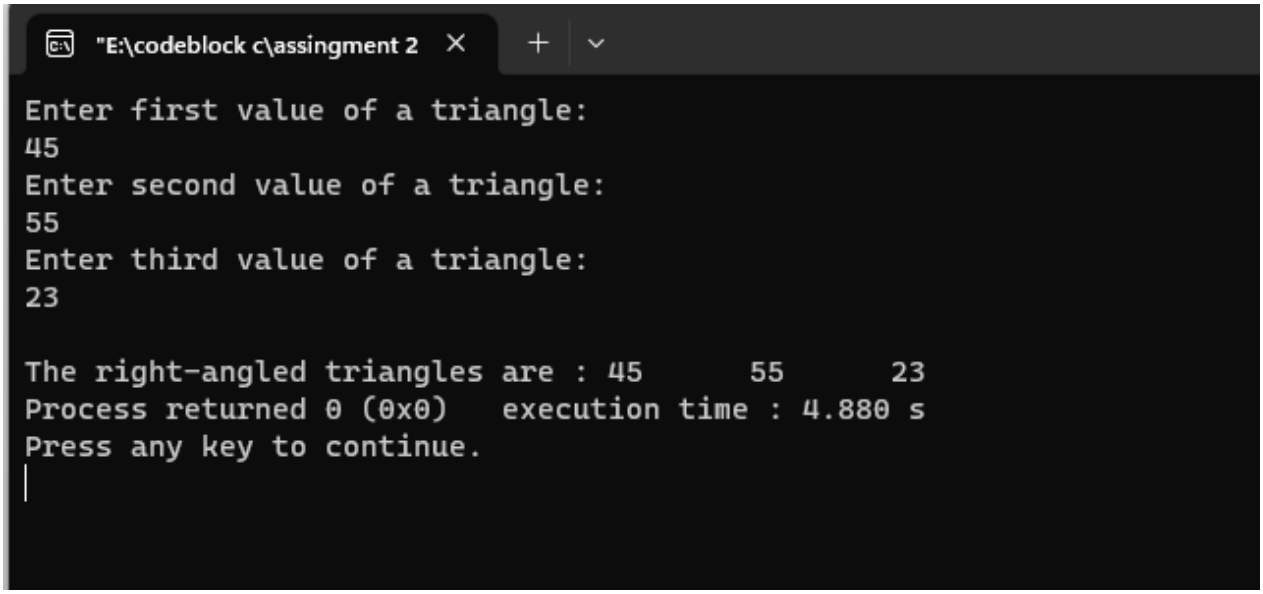
6.10 compute the real roots of a quadratic equation

```
#include<stdio.h>
int main()
{
   float a,b,c,n1,n2,D;
   printf("Enter a: ");
   scanf("%f",&a);
   printf("Enter b: ");
   scanf("%f",&b);
   printf("Enter c: ");
   scanf("%f",&c);
   D= sqrt(b*b-4*a*c);
   x1=(-b-D)/(2*a);
   x2=(-b+D)/(2*a);
   printf("The value of x1: %f",x1);
   printf("The value of x2: %f",x2);
}
```



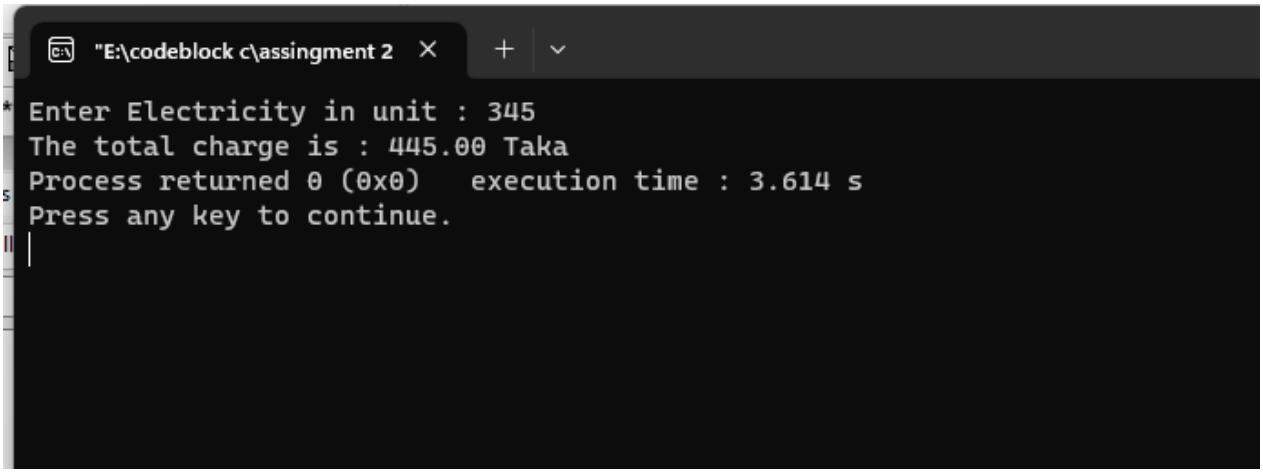
6.11 displays the output stating that they are the sides of right-angled triangle

```
#include<stdio.h>
int main()
{
   int n1,n2,n3;
   printf("Enter first value of a triangle:\n");
   scanf("%d",&n1);
   printf("Enter second value of a triangle:\n");
   scanf("%d",&n2);
   printf("Enter third value of a triangle:\n");
   scanf("%d",&n3);
   printf("\nThe right-angled triangles are : %d\t %d\t %d\t",n1,n2,n3);

}
```



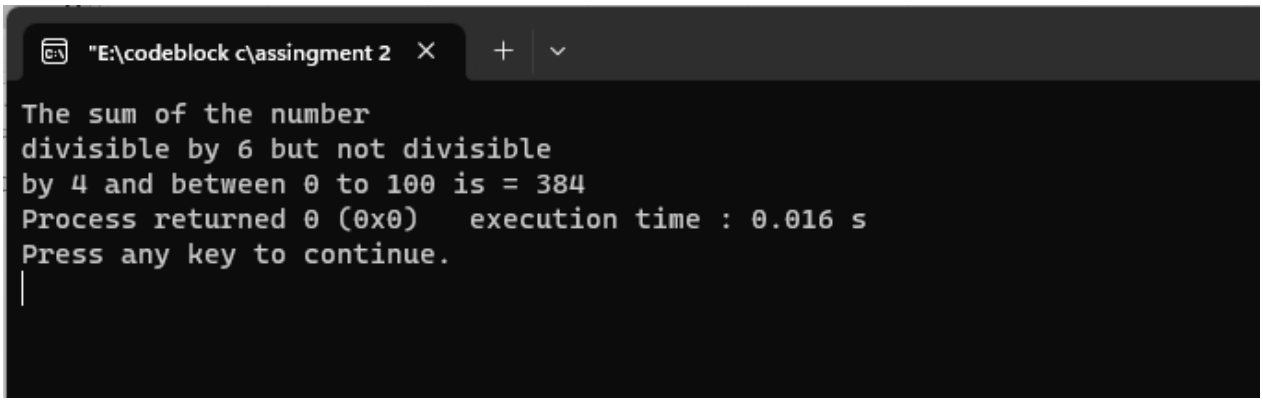
6.12 An electricity board charges

```
#include<stdio.h>
int main()
{
   float unit,sum=100;
   printf("Enter Electricity in unit : ");
   scanf("%f",&unit);
   if(unit<=200)

      sum=sum+unit*0.8;


   else if(unit>200&&unit<=300)


      sum=sum+unit*0.9;


   else if(unit>300)


      sum=sum+unit*1;


   printf("The total charge is : %0.2f Taka",sum);
}
```



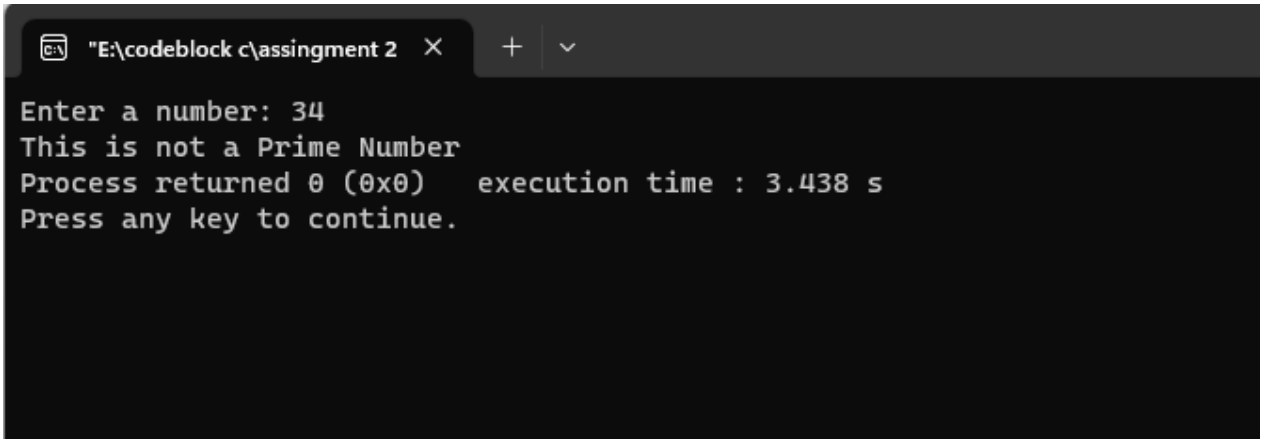
6.13 compute and display the sum of all integers that are divisible by 6 but not divisible by 4 and lie between 0 and 100

```
#include<stdio.h>
int main()
{
   int sum=0,i,n;
   n=100;
   for(i=0;i<=n;i++)
   {
      if(i%6==0&&i%4!=0)
    sum= sum+i;

    }
   printf("The sum of the number \ndivisible by 6 but not divisible \nby 4 and between 0 to 100
is = %d",sum);
}
```



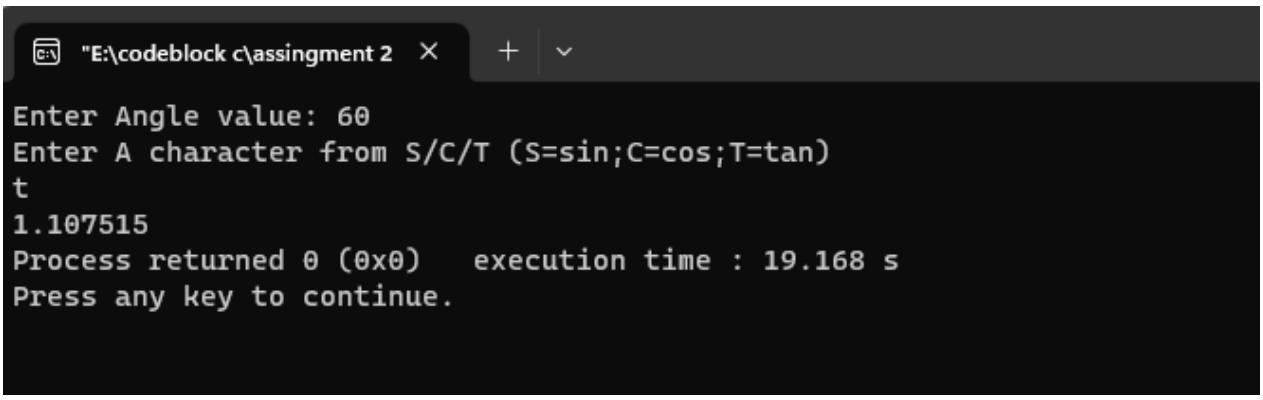
6.14 the number is a prime number and display the output accordingly.

```
#include<stdio.h>
int main()
{
   int n,i,count=0;
   printf("Enter a number: ");
   scanf("%d",&n);

   for(i=2;i<n;i++)
   {
      if(n%i==0){
         count++;
         break;}
   }
   if(count==0)
   {
      printf("This is a Prime Number");

   }
   else
      {
   printf("This is not a Prime Number");
   }


   return 0;
}
```



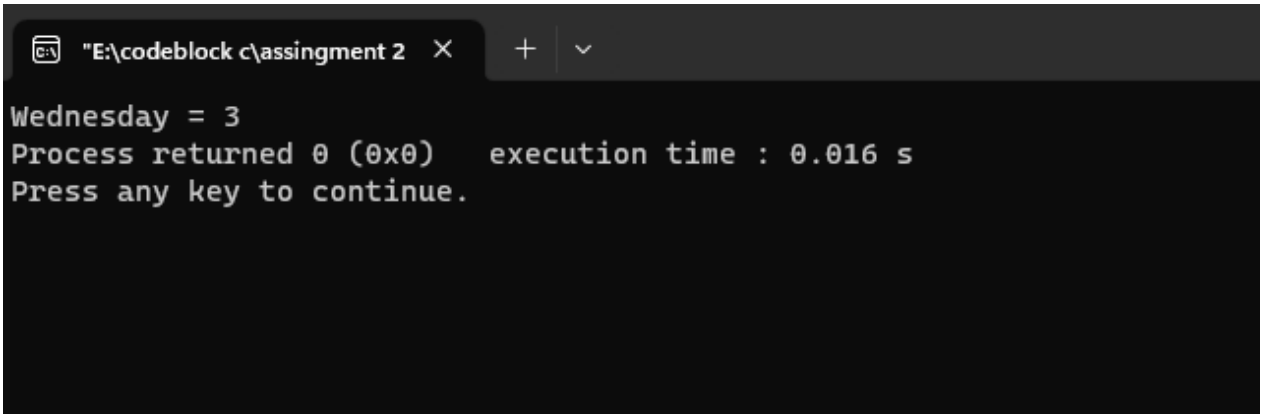
6.15 double-type value x that represents angle in radians

```
#include<stdio.h>
#include<math.h>
int main()
{
   double n,x,r;
   char T;
   printf("Enter Angle value: ");
   scanf("%lf",&x);
   r=x*(180/3.1416);
   printf("Enter A character from S/C/T \n");
   scanf("%s",&T);

   switch(T){
   case 's':
   case 'S':

      n=sin(r);
   case 'c':
   case 'C':

      n=cos(r);
   case 't':
   case 'T':

      n=tan(r);
      }
printf("%lf",n);
   }
```



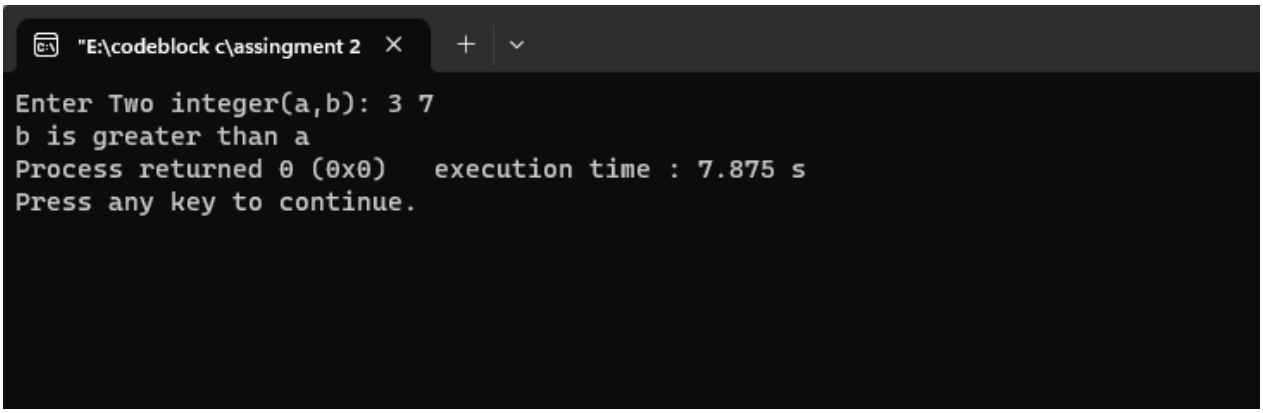
6.16 Enumaration

```
#include<stdio.h>
enum days_in_week{
monday=1,tuesday,wednesday,thursday,friday,saturday,sunday

};
int main()
{
   enum days_in_week day1
   day1=wednesday;
   printf("Wednesday = %d");

}
```



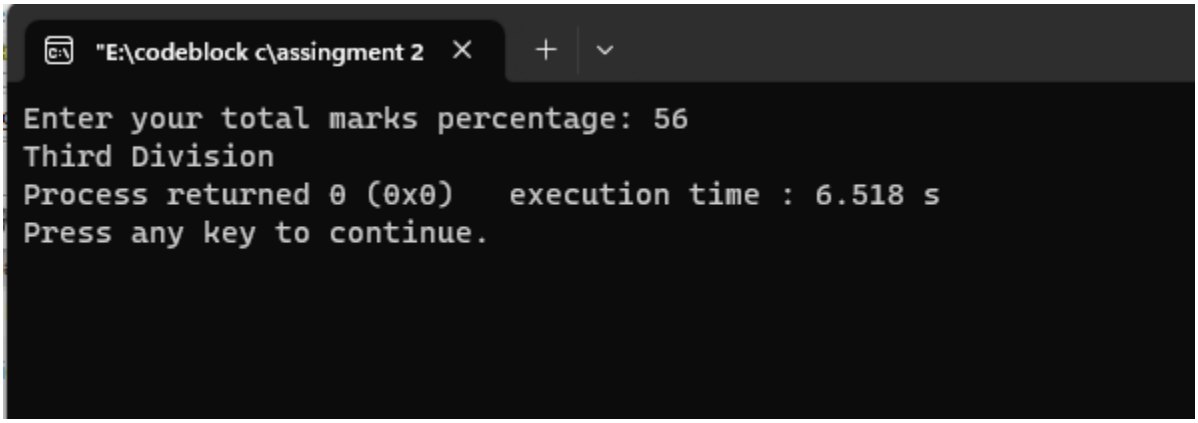
6.17 Greater or smaller or equal

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

   int a,b;
   printf("Enter Two integer(a,b): ");
   scanf("%d %d",&a,&b);
   if(a>b)
   printf("a is greater than b");
   else if(a<b)
   printf("b is greater than a");
   else
   printf("a and b are equal");
}
```



6.18 Mark distribution with Grading system

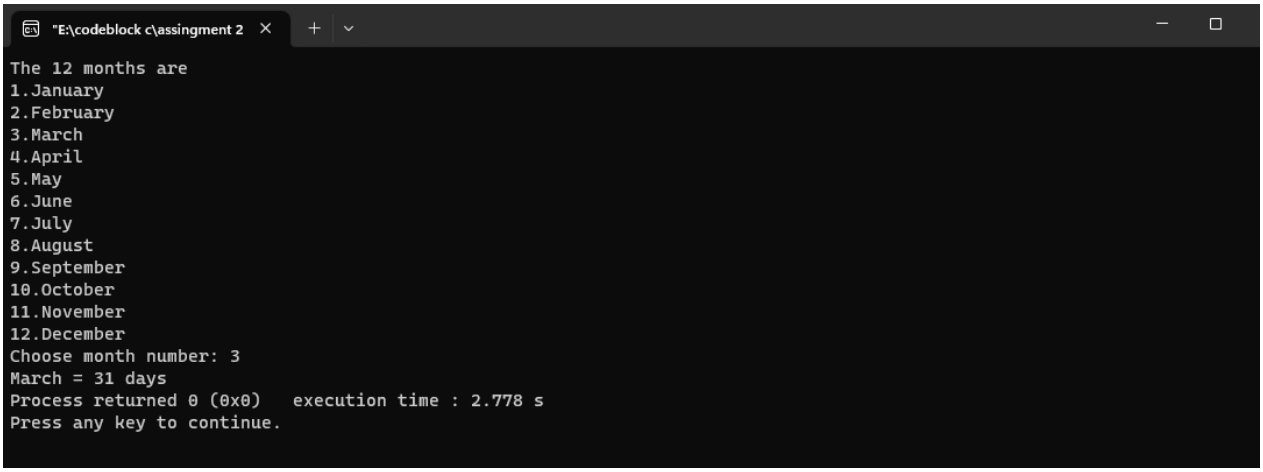
```
#include<stdio.h>
int main()
{
   int n;
   printf("Enter your total marks percentage: ");
   scanf("%d",&n);
   if(n>=80)
      printf("First Division");
   else if(n>=60 && n<80)
      printf("Second Division");
   else if(n<60)
      printf("Third Division");
}
```



6.19 display the corresponding number of days in that month

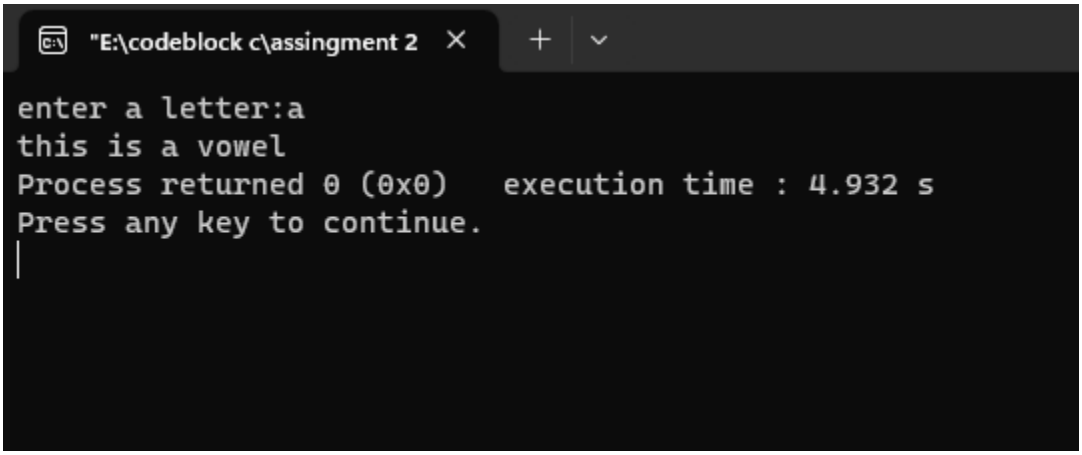
```
#include<stdio.h>
int main()
{

   int n;
   printf("The 12 months
are\n1.January\n2.February\n3.March\n4.April\n5.May\n6.June\n7.July\n8.August\n9.Septem
ber\n10.October\n11.November\n12.December");
   printf("\nChoose month number: ");
   scanf("%d",&n);
   switch(n)
{
case 1:
   printf("January = 31 days");
case 2:
   printf("February = 28 days");
case 3:
   printf("March = 31 days");
case 4:
   printf("April = 30 days");
case 5:
   printf("May = 31 days");
case 6:
   printf("June = 30 days");
case 7:
   printf("July = 31 days");
```

```
case 8:
   printf("August = 31 days");
case 9:
   printf("September = 30 days");
case 10:
   printf("October = 31 days");
case 11:
   printf("November = 30 days");
case 12:
   printf("December = 31 days");
}
}
```



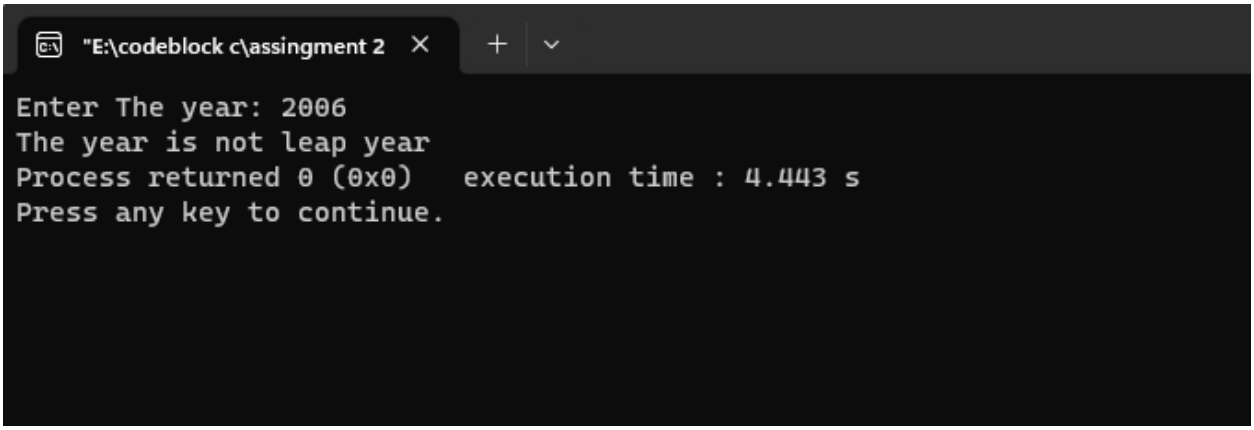
C Program to Check Whether a Character is a Vowel or Consonant

```
#include<stdio.h>
int main()
{
   char ch;
   printf("enter a letter:");
   scanf("%c",&ch);
   if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u')
      printf("this is a vowel");
   else
      printf("this is a consonent");

   return 0;
}
```



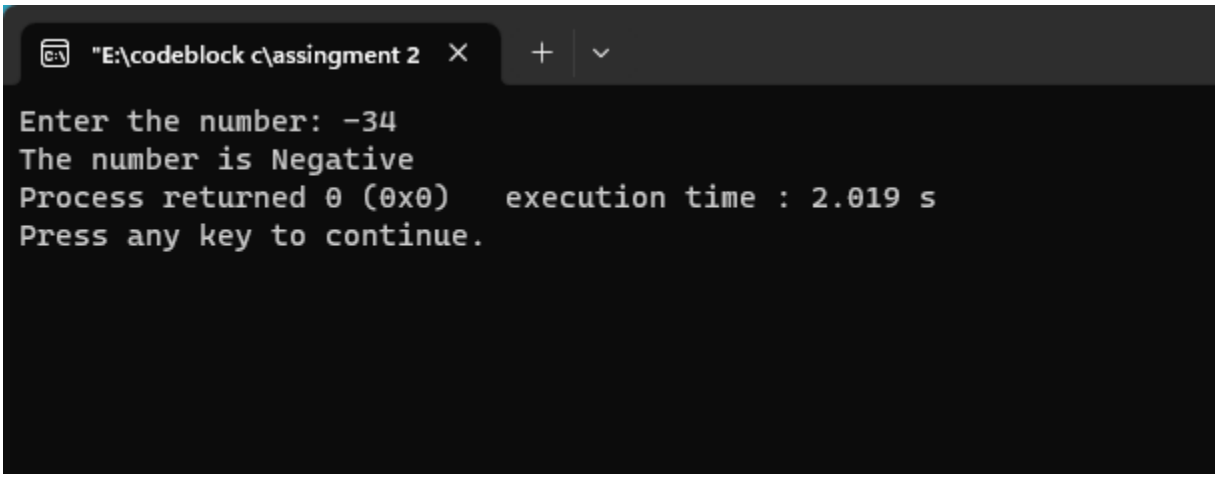
C Program to Check Leap Year

```
#include<stdio.h>
int main()
{
   int n;
   //n=year
   printf("Enter The year: ");
   scanf("%d",&n);
   if(n%4==0)
   {
      if(n%100==0)
      {
         if(n%400==0)
         {
            printf("The year is a leap year");
         }}}
   else
      printf("The year is not leap year");
}
```



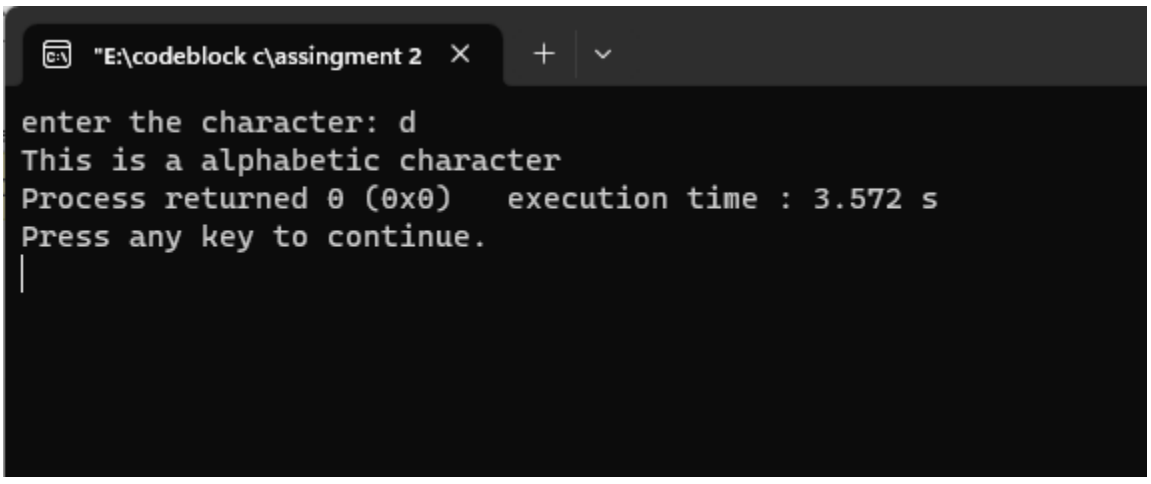
C Program to Check Whether a Number is Positive or Negative

```
#include<stdio.h>
int main()
{
   int n;
   printf("Enter the number: ");
   scanf("%d",&n);
   if(n>0)
   {
      printf("The number is positive ");
   }
   else if(n<0)
   {
      printf("The number is Negative ");
   }
   else
   {
      printf("The number is Zero");
   }
}
```



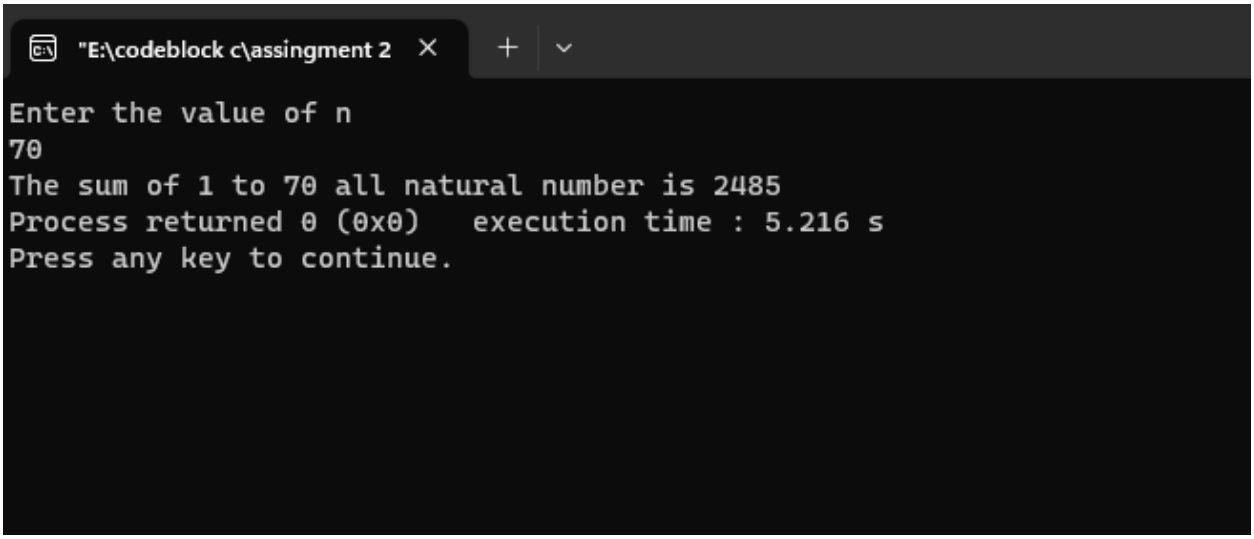
C Program to Check Whether a Character is an Alphabet or not

```
#include<stdio.h>
int main()
{
   char n;
   printf("enter the character: ");
   scanf("%c",&n);

   if(n>=65 && 90>=n)
      printf("This is a alphabetic character");
   else if(n>=97 && 122>=n)
      printf("This is a alphabetic character");
   else
   printf("This is not a alphabetic character");

}
```



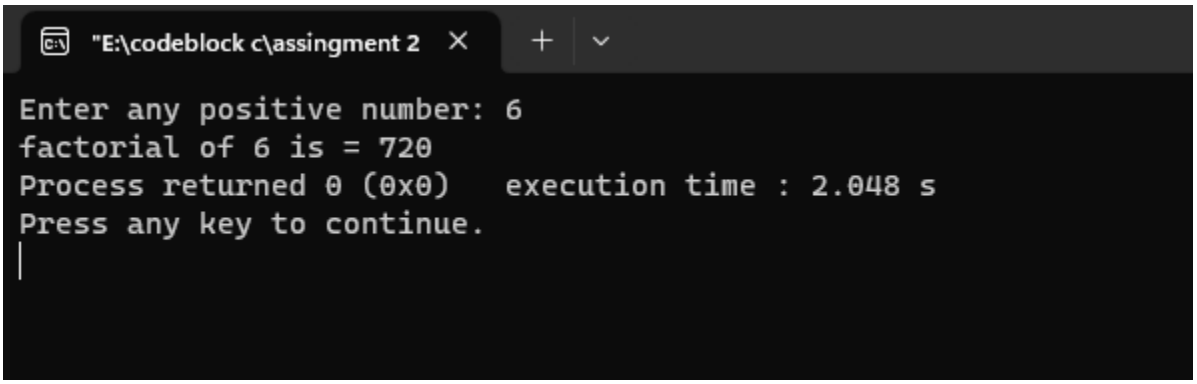
C Program to Calculate the Sum of Natural Numbers

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

   int n,i,sum=0;
   printf("Enter the value of n\n");
   scanf("%d",&n);
   for(i=1;i<=n;i++)
   {
      sum=sum+i;

   }

   printf("The sum of 1 to %d all natural number is %d",n,sum);
}
```



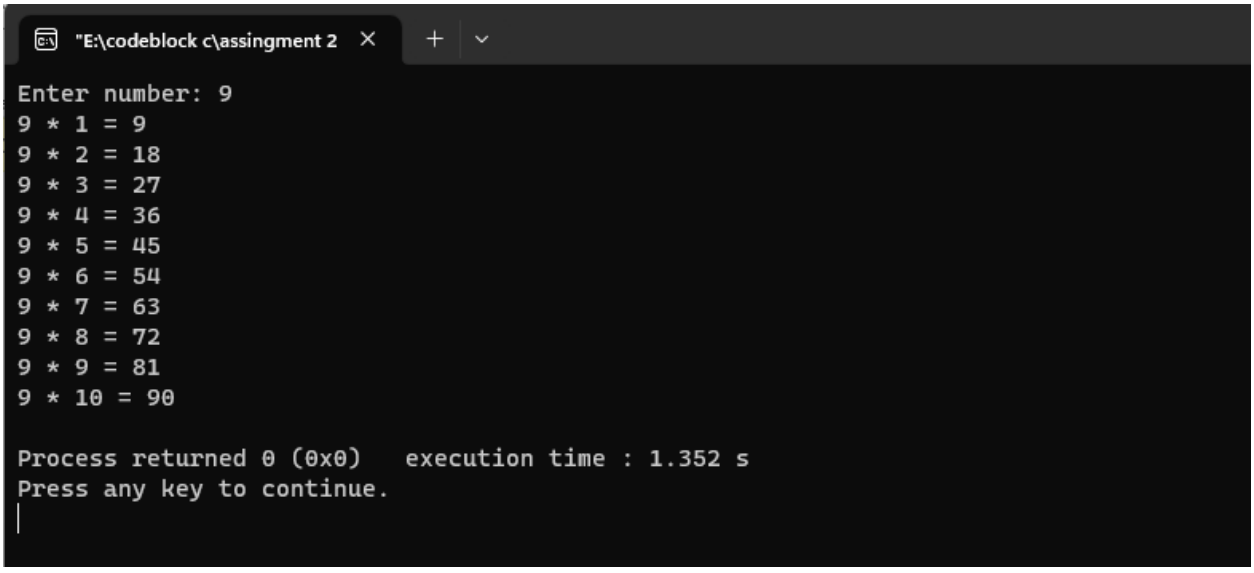
C Program to Factorial of a Number

```
#include<stdio.h>
int main()
{
   int n,i,fact=1;
   printf("Enter any positive number: ");
   scanf("%d",&n);
   for(i=1;i<=n;i++)
   {
      fact=fact*i;
}
   printf("factorial of %d is = %d",n,fact);
}
```



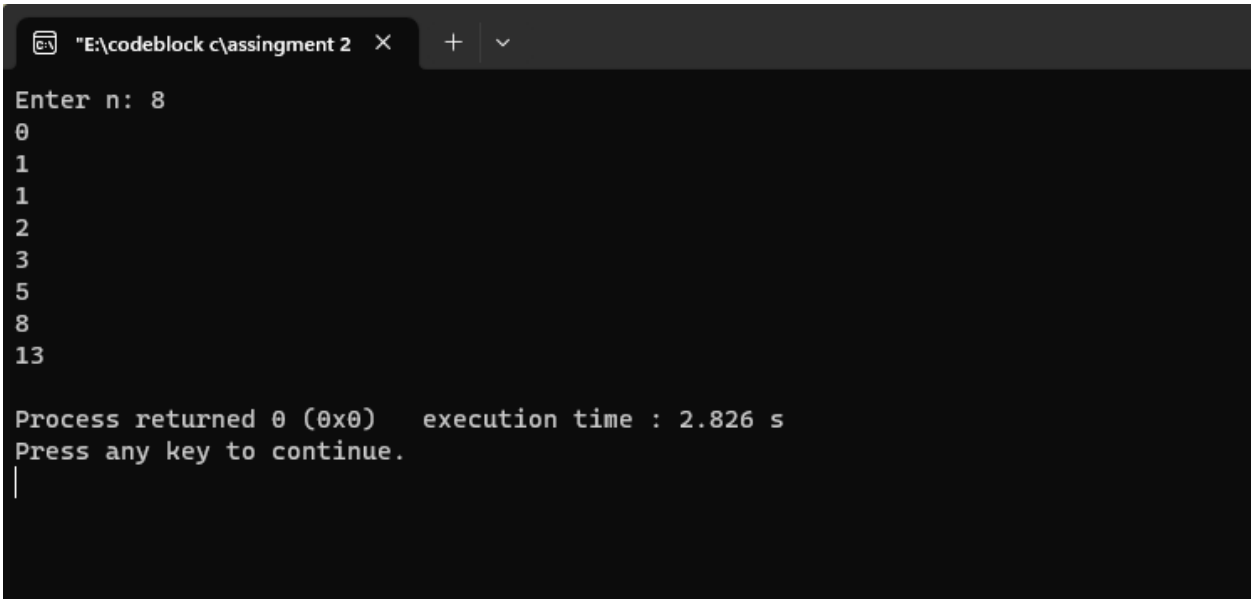
C Program to Generate Multiplication Table

```
#include<stdio.h>
int main()
{
   int n,i;
   printf("Enter number: ");
   scanf("%d",&n);
   for(i=1;i<=10;i++)
   {
      printf("%d * %d = %d",n,i,n*i);
      printf("\n");
   }

}
```



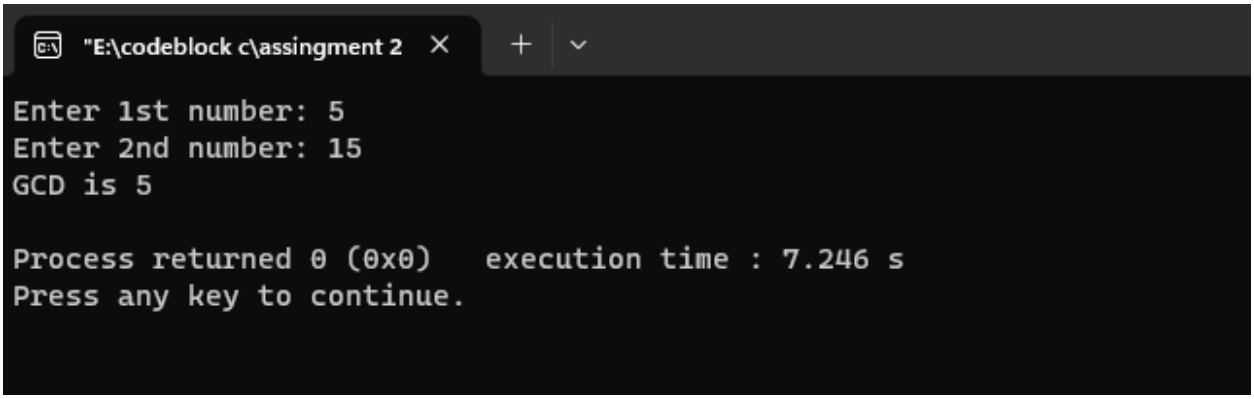
C Program to Display Fibonacci Sequence

```
#include<stdio.h>
int main()
{  //fibonacci number
   int n,i,num1=0,num2=1,fib;
   printf("Enter n: ");
   scanf("%d",&n);
   printf("%d\n",num1);
   printf("%d\n",num2);
   for(i=0;i<=n-3;i++)
   {
      fib=num1+num2;
      num1=num2;
      num2=fib;
      printf("%d\n",fib);
   }
}
```



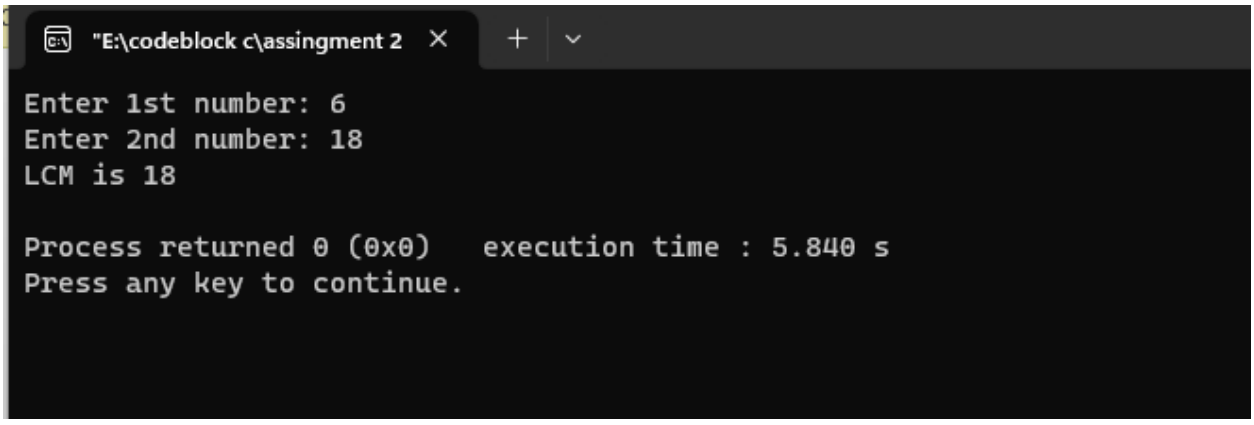
C Program to Find GCD of two Numbers

```
#include<stdio.h>
int main()
{
   int n1,n2,rem,lcm,gcd,num1,num2;
   printf("Enter 1st number: ");
   scanf("%d",&num1);
   printf("Enter 2nd number: ");
   scanf("%d",&num2);
   n1=num1;
   n2=num2;
   while(n2!=0)
   {
      rem=n1%n2;
      n1=n2;
      n2=rem;   }
   gcd=n1;
   printf("GCD is %d\n",gcd);
 }
```



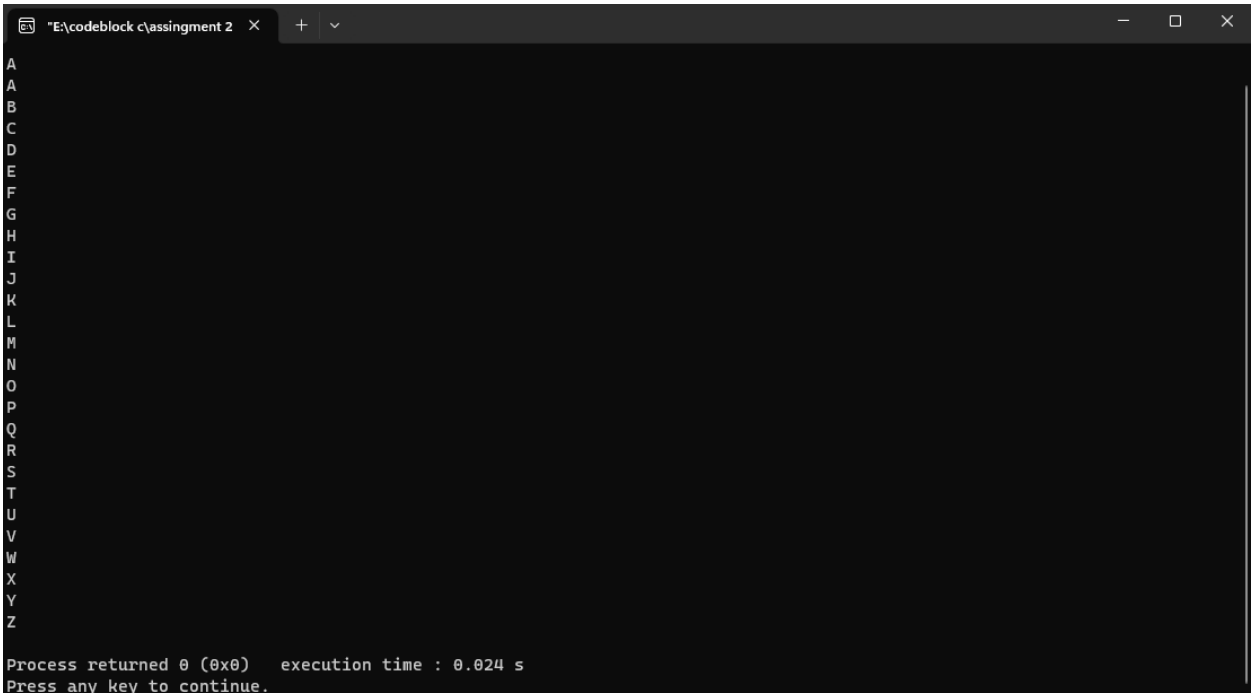
C Program to Find LCM of two Numbers

```
#include<stdio.h>
int main()
{
   int n1,n2,rem,lcm,gcd,num1,num2;
   printf("Enter 1st number: ");
   scanf("%d",&num1);
   printf("Enter 2nd number: ");
   scanf("%d",&num2);
   n1=num1;
   n2=num2;
   while(n2!=0)
   {
      rem=n1%n2;
      n1=n2;
      n2=rem;  }
   gcd=n1;
   lcm=((num1*num2)/gcd);
   printf("LCM is %d\n",lcm);
}
```



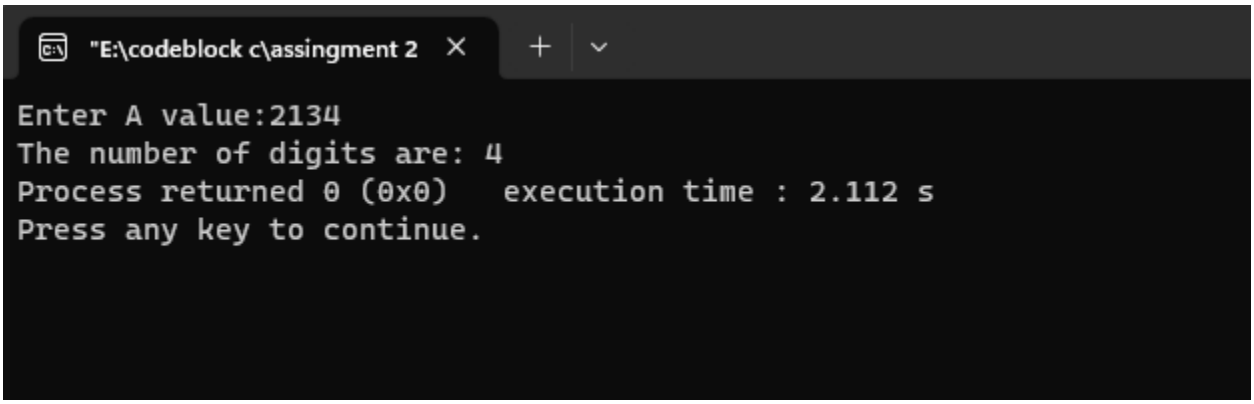
C Program to Display Characters from A to Z Using Loop

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

   int i,n;
   char c;
   n=90;
   printf("All alphabetic from A to Z are: \n");
   for(i=65;i<=n;i++)
   {
      printf("%c\n",i);
   }
}
```



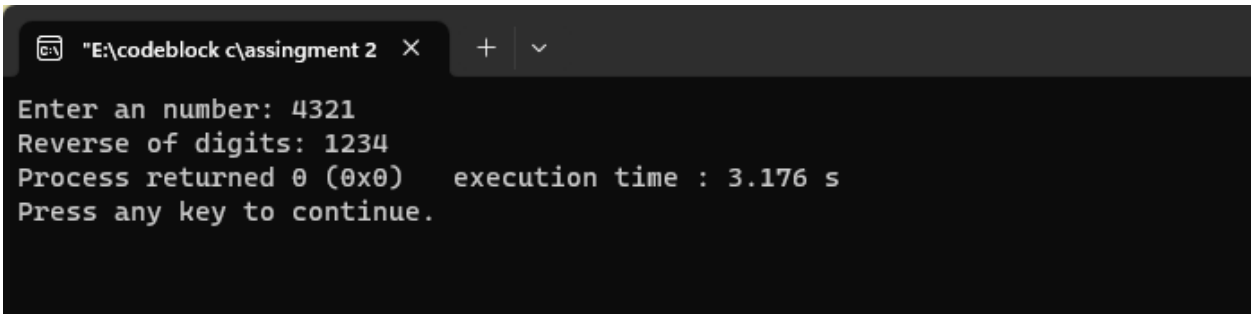
C Program to Count Number of Digits in an Integer

```
#include<stdio.h>
int main()
{
   int n,count=0;
   printf("Enter A value:");
   scanf("%d",&n);
   while(n!=0)
   {
      n=n/10;
      count++;
   }
   printf("The number of digits are: %d",count);

}
```



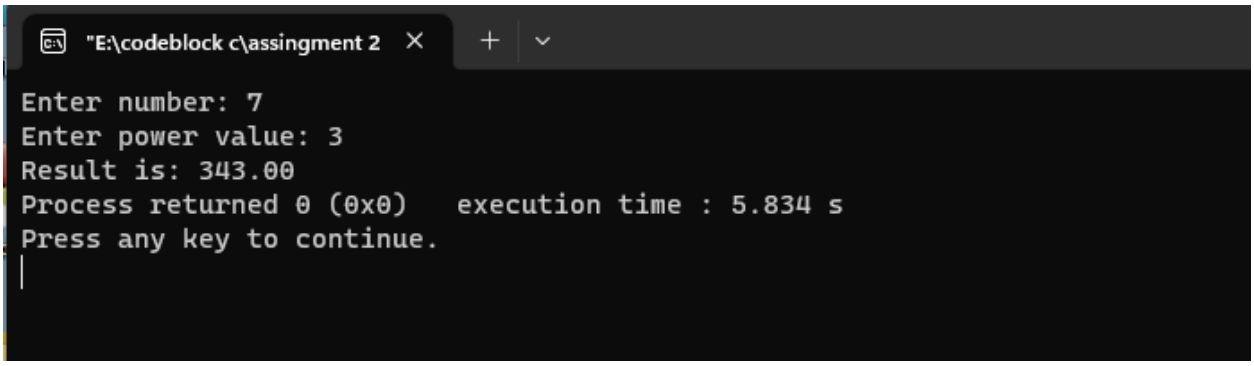
C Program to Reverse a Number

```
#include<stdio.h>
int main()
{
   int n,count=0;
   printf("Enter A value:");
   scanf("%d",&n);
   while(n!=0)
   {
      n=n/10;
      count++;
   }
   printf("The number of digits are: %d",count);

}
```



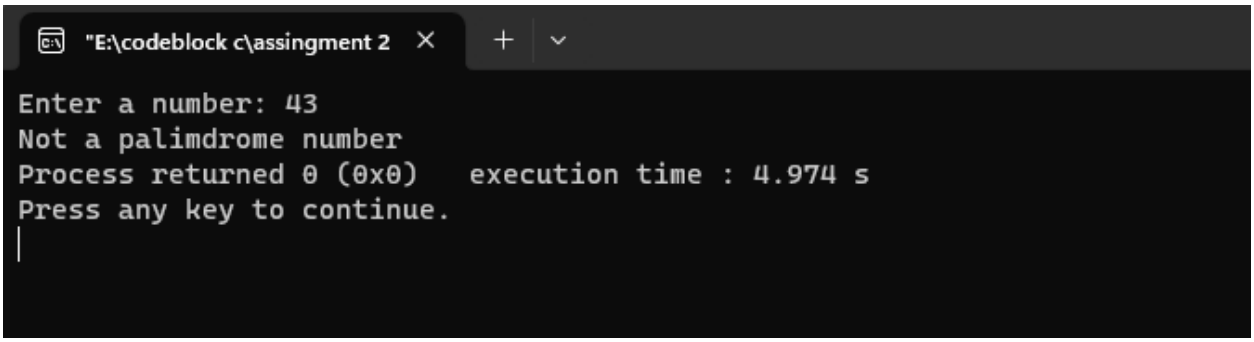
C Program to Calculate the Power of a Number

```
#include<stdio.h>
int main()
{ //x=number;y=power
   double x,y,result;
   printf("Enter number: ");
   scanf("%lf",&x);
   printf("Enter power value: ");
   scanf("%lf",&y);
   result=pow(x,y);
   printf("Result is: %0.2lf",result);
   return 0;
}
```



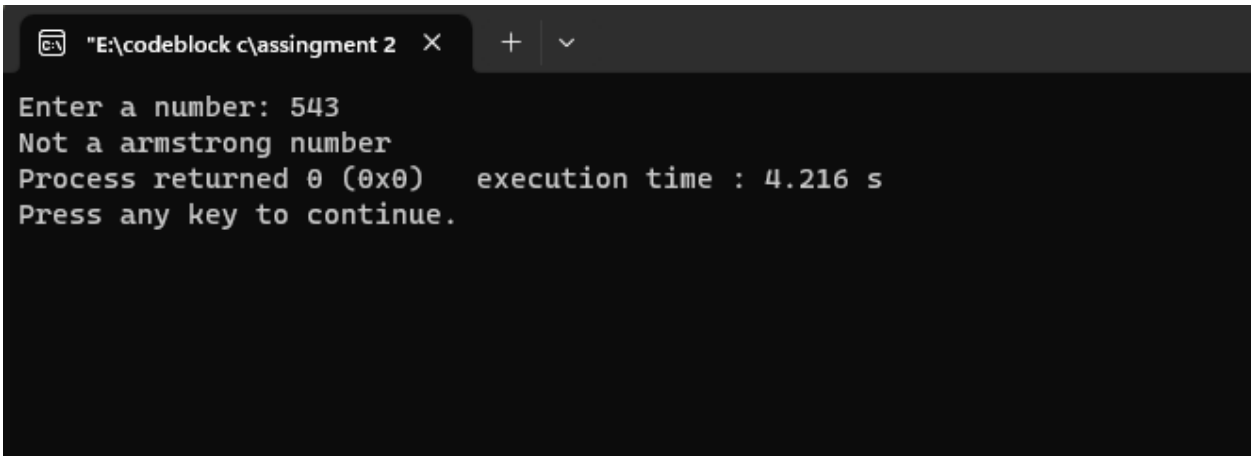
C Program to Check Whether a Number is Palindrome or Not

```
#include<stdio.h>
int main()
{
   int n,num,r,sum=0;
   printf("Enter a number: ");
   scanf("%d",&num);
   n=num;
   while(n!=0)
   {
      r=n%10;
      sum=sum*10+r;
      n=n/10;
}
   if(sum==num)
      printf("This is a Palindrome number");
   else
      printf("Not a palimdrome number");
   return 0;
}
```



C Program to Check Armstrong Number

```
#include<stdio.h>
int main()
{
   int n,num,temp=0,r;
   printf("Enter a number: ");
   scanf("%d",&n);
   num=n;
   while(num!=0)
   {
      r=num%10;
      temp=temp+(r*r*r);
      num=num/10;
   }
   if(temp==n)
      printf("The number is a armstrong number");
   else
      printf("Not a armstrong number");
   return 0;
}
```



C Program to Make a Simple Calculator Using switch...case

```
#include<stdio.h>
int main()
{
   float sum,sub,mul,div;
   int a,b,n;
   printf("Main menu:\n1.SUM\n2.SUB\n3.MUlTIPLICATION\n4.DIVISION\nEnter your choice: ");
   scanf("%d",&n);
   switch(n)
   {
   case 1:
      {printf("Enter 1st value:");
      scanf("%d",&a);
      printf("Enter 1st value:");
      scanf("%d",&b);
      sum=a+b;
      printf("Sum is: %0.2f",sum);}
      break;
   case 2:
      {printf("Enter 1st value:");
      scanf("%d",&a);
      printf("Enter 1st value:");
      scanf("%d",&b);
      sub=a-b;
      printf("Sub is: %0.2f",sub);}
      break;
   case 3:
      {printf("Enter 1st value:");
```

```
        scanf("%d",&a);
        printf("Enter 1st value:");
        scanf("%d",&b);
        mul=a*b;
        printf("Multiplication is: %0.2f",mul);}
        break;
    case 4:
        {printf("Enter 1st value:");
        scanf("%d",&a);
        printf("Enter 1st value:");
        scanf("%d",&b);
        div=a/b;
        printf("Division is: %0.2f",div);}
        break;

    }
}
```