



The given number is even or odd

```
In [1]: num=int(input("Enter a number:"))
a=10
if(a%2)==0:
    print("a is even")
else:
    print("a is odd")
```

Enter a number:10
a is even



Develop a program to find whether the given number is positive or negative.

```
In [1]: a=int(input("Enter the value of a:"))
if(a>0):
    print("The given number is positive")
else:
    print("The given number is negative")
```

Enter the value of a:100
The given number is positive



Develop a program to find whether the given number is prime or not

```
In [7]: num=23
if num>1:
    for i in range(2,int(num/2)+1):
        if (num%i)==0:
            print(num,"is not a prime number")
            break
    else:
        print(num,"is a prime number")
else:
    print(num,"is not a prime number")
```

23 is a prime number



Develop a program to whether it is pallindrome.

```
In [1]: def is_palindrome(n):  
        return str(n)==(reversed(str(n)))  
n=int(input("Enter the number:"))  
if is_palindrome(n):  
    print("The number is a palindrome!")  
else:  
    print("The number is not a palindrome.")
```

```
Enter the number:10  
The number is not a palindrome.
```



Sum of two numbers

```
In [2]: num1=200
num2=300
sum=num1+num2
print("sum of",num1,"and",num2,"is",sum)
```

sum of 200 and 300 is 500



Develop a program to find sum of two numbers using functions

```
In [1]: def sum(x,y):  
        return x+y  
a=int(input("Enter the num1:"))  
b=int(input("Enter the num2:"))  
c=sum(a,b)  
print("sum of",a,"and",b,"is",c)
```

```
Enter the num1:20  
Enter the num2:30  
sum of 20 and 30 is 50
```


Develop a program to find maximum of two numbers

```
In [1]: def max(a,b):  
        if a>=b:  
            return a  
        else:  
            return b  
a=100  
b=1000  
print(max(a,b))  
  
1000
```



Develop a program to find minimum of two numbers.

```
In [1]: def min(a,b):  
        if a<=b:  
            return a  
        else:  
            return b  
  
a=500  
b=200  
print(min(a,b))
```

200

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Run

Develop a program to generate Fibonacci sequence of length(N).Read N from the console.

```
In [2]: num=int(input("Enter the Fibonacci sequence length:"))
firstTerm=0
secondTerm=1
print("The Fibonacci series with",num,"terms is:")
print(firstTerm,secondTerm,end=" ")
for i in range(2,num):
    curTerm=firstTerm+secondTerm
    print(curTerm,end=" ")
    firstTerm=secondTerm
    secondTerm=curTerm
```

Enter the Fibonacci sequence length:10
The Fibonacci series with 10 terms is:
0 112358132134



Write a function to calculate factorial of a number. Develop a program to compute binomial coefficient.

```
In [1]: def fact(num):  
        if num==0:  
            return 1  
        else:  
            return num*fact(num-1)  
n=int(input("Enter the value of N:"))  
r=int(input("Enter the value of R(R cannot be negative or greater than N):"))  
print("Factorial of",n,"is:",fact(n))  
nCr=fact(n)/(fact(r)*fact(n-r))  
print(n,'C',r,"=",nCr)
```

Enter the value of N:5

Enter the value of R(R cannot be negative or greater than N):2

Factorial of 5 is: 120

5 C 2 = 10.0



Develop a program to find GCD of two numbers.

```
In [7]: def gcd(a,b):
        if(a==0):
            return b
        if(b==0):
            return a
        if(a==b):
            return a
        if(a>b):
            return gcd(a-b,b)
        return gcd(a,b-a)
a=98
b=56
if(gcd(a,b)):
    print('GCD of',a,'and',b,'is',gcd(a,b))
else:
    print('not found')
```

GCD of 98 and 56 is 14



Develop a program to swap two numbers

```
In [1]: x=5
y=10
print("Before swapping:")
print("value of x:",x,"and y:",y)
x,y=y,x
print("After swapping:")
print("value of x:",x,"and y:",y)
```

```
Before swapping:
value of x: 5 and y: 10
After swapping:
value of x: 10 and y: 5
```



Develop a program to reverse number is string.

```
In [1]: num=123456789
reversed_num=0
while num !=0:
    digit=num%10
    reversed_num=reversed_num*10+digit
    num//=10
print("Reversed Number:"+str(reversed_num))
```

Reversed Number:987654321

Develop a program to guess number using random.

```
In [2]: import random
n=random.randrange(1,10)
guess=int(input("Enter any number:"))
while n!=guess:
    if guess<n:
        print("Too Low!")
        guess=int(input("Enter number again:"))
    elif guess>n:
        print("Too High!")
        guess=int(input("Enter number again:"))
    else:
        break
print("You guessed it right!!!")
```

```
Enter any number:1
Too Low!
Enter number again:7
You guessed it right!!!
```