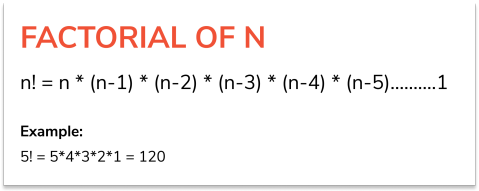
Experiment 5

AIM

Write a Python program to generate first n Fibonacci number and factorial of n using functions.

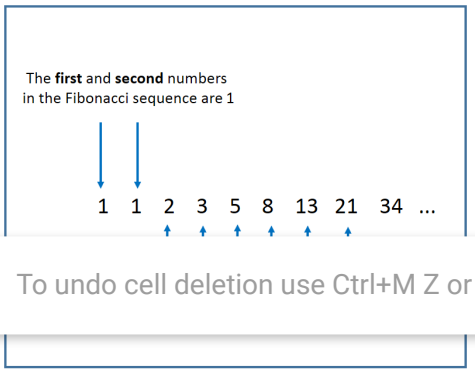
Description



Binomial Coefficient

$$ {}_nC_k = \frac{n!}{k!(n-k)!} $$

The Fibonacci Sequence



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Program

```
# Factorial of a number n>=0
# Function definition
def fact(num):
  val = 1
  while num!=0:
    val = val*num
    num = num - 1
  return val
# Ask user to input the number
num = int(input("Enter a number: "))
# Function invocation
factorial = fact(num)
print(factorial)
```

```
Enter a number: 6
720
```

```
# Determine Binomial Coefficient nCk
def bcoeff(n,k):
  nCk = fact(n)/(fact(k)*fact(n-k))
  return nCk

n, k = 5, 3
nCk = bcoeff(n,k)
print('C (',n,',',k,') = ',nCk)
```

```
C ( 5 , 3 ) =  10.0
```

```
# Function for nth Fibonacci number
def seq(num):
  prev, current, next = 0,1,0
  i = 0
  while i<num:
    print(prev)
    next = prev + current
    prev = current
    current = next
    i+=1

# Function invocation
num = int(input("Enter a number: "))
seq(num)
```

```
Enter a number: 8
```



```
2
3
5
8
13
```

Conclusion

Hence we made a Python program to generate first n Fibonacci number and factorial of n using functions.

Evaluation

Criteria	Total Marks	Marks Obtained	Comments
Concept(A)	2		
Implementation(B)	2		
Performance(C)	2		
Total	6		