In [1]:

```
def fact(n):
    if(n==1):
        return 1
    return fact(n-1) * n
n = int(input("Enter a number "))
x = fact(n)
print("The factorial of " , n , " is ", x)
```

```
Enter a number 12
The factorial of  12  is  479001600
```

In [2]:

```
def sum(n):
    if(n == 0):
        return 0
    x = n%10
    n//=10
    return sum(n) + x
n = int(input("Enter a number "))
x = sum(n)
print("The sum of digit of " , n , " is ", x)
```

```
Enter a number 176773
The sum of digit of  176773  is  31
```

In [3]:

```
def rev(n):
    c = 0
    while (n!=0):
        x = n%10
        n //=10
        c = c*10 + x
    return c
n = int(input("Enter a number "))
x = rev(n)
print("The reverse of " , n , " is ", x)
```

```
Enter a number 7672
The reverse of  7672  is  2767
```

In [4]:

```
def gdc(n1,n2):
    if(n2 == 0):
        return n1
    else:
        return gdc(n2,n1%n2)
n1 = int(input("Enter a number "))
n2 = int(input("Enter a another number "))
x = gdc(n1,n2)
print("The gcd of two number is ",n1 , " and ", n2, " is ",x)
```

```
Enter a number 12
Enter a another number 15
The gcd of two number is  12  and  15  is  3
```

In [5]:

```
import math
def prime(a):
    for i in range (2,int(math.sqrt(a))+1):
        if(a%i == 0):
            return True
    return False
n = int(input("Enter a number "))
if(prime(n)):
    print("It is not a prime number")
else:
    print("It is a prime number")
```

```
Enter a number 57
It is not a prime number
```

In [6]:

```
import math
def prime(a):
    for i in range (2,int(math.sqrt(a))+1):
        if(a%i == 0):
            return False
    return True
n = int(input("Enter a number "))
for i in range (2,int(n/2)):
    if(n%i==0):
        if(prime(i)):
            print(i)
```

```
Enter a number 18
2
3
```

In [7]:

```
n = int(input("Enter a row "))
for i in range(1,n+1):
    x = 0
    for j in range(1,i+1):
        if(i%2 == 1):
            if(j%2==1):
                print(x+1,end=" ")
            else:
                print(x,end=" ")
        else:
            if(j%2==0):
                print(x+1,end=" ")
            else:
                print(x,end=" ")
    print("")
```

```
Enter a row 7
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
0 1 0 1 0 1
1 0 1 0 1 0 1
```

In [11]:

```
def pattern1(x):
    for i in range(1,x+1):
        a=i
        for j in range(1,i+1):
            print(chr(64+a),end=" ")
            a-=1
        print()
a=int(input("Enter the number of rows:"))
pattern1(a)
```

```
Enter the number of rows:7
A
B A
C B A
D C B A
E D C B A
F E D C B A
G F E D C B A
```

In [12]:

```
def pattern2(x):
    for i in range(1,x+1):
        if(i%2==1):
            for j in range(1,i+1):
                print(j,end=" ")
        else:
            b=i
            for j in range(0,i):
                print(b,end=" ")
                b-=1
        print("\n")
a=int(input("Enter the number of rows:"))
pattern2(a)
```

```
Enter the number of rows:6
1

2 1

1 2 3

4 3 2 1

1 2 3 4 5

6 5 4 3 2 1
```

In [13]:

```
base = int(input("Enter a base "))
n = int (input("Enter a number "))
ans = 0
i = 0
while(n!=0):
    x = n%base
    n//=base
    ans = x*(10**i) + ans
    i+=1
print("The converted number to base is ",ans)
```

```
Enter a base 6
Enter a number 3467
The converted number to base is  24015
```

In [14]:

```
lt = []
n = int(input("Enter a range "))
for i in range (0,n):
    i = int(input())
    lt.append(i)
mx = 0
for i in range(0,n):
    if(mx<lt[i]):
        mx = lt[i]
print("The largest number is " , mx)
```

```
Enter a range 5
12
13
45
34
98
The largest number is  98
```

In [16]:

```
lt = []
n = int(input("Enter a range "))
for i in range (0,n):
    i = int(input())
    lt.append(i)
mn = lt[0]
for i in range(0,n):
    if(mn>lt[i]):
        mn = lt[i]
print("The smallest number is " , mn)
```

```
Enter a range 5
12
4
3
7
8
The smallest number is  3
```

In [18]:

```
a=[1,2,3,4,5,7,10,12,23]
b=[6,7,8,9,10,1,11,12]
print("Elements in both the lists are",[i for i in a if i in b])
```

```
Elements in both the lists are [1, 7, 10, 12]
```

In [19]:

```
def perfect(x):
    a=0
    for i in range(1,int(x/2+1)):
        if x%i==0:
            a+=i
    return x==a
a=int(input("Enter a number:"))
if(perfect(a)):
    print(a,"is perfect")
else:
    print(a,"is not perfect")
```

```
Enter a number:45
45 is not perfect
```

In [22]:

```
def check(a):
    u=0
    l=0
    for i in a:
        if(i.isupper()):
            u+=1
        else:
            l+=1
    print(a,"have",u,"uppercase &",l,"lowercase characters")
check(input("Enter a string:"))
```

```
Enter a string:Bibek Kc
Bibek Kc have 2 uppercase & 6 lowercase characters
```

In [23]:

```
is_palindrome = lambda bool: a==a[::-1]
a=input("Enter the string:")
if(is_palindrome(a)):
    print(a,"is palindrome string.")
else:
    print(a,"is not palindrome.")
```

```
Enter the string:Bibik
Bibik is not palindrome.
```

In [ ]: