

### Finding whether a number is Palindrome or not

```
num=int(input("Enter a number:"))
temp=num
rev=0
while(num>0):
    dig=num%10
    rev=rev*10+dig
    num=num//10
if(temp==rev):
    print("The number is palindrome!")
else:
    print("Not a palindrome!")
```

#### Output

Enter a number:121

The number is palindrome!

### Finding whether a String is Palindrome or not

```
string=input(("Enter a string:"))
if(string==string[::-1]):
    print("The string is a palindrome")
else:
    print("Not a palindrome")
```

#### Output

Enter a string : liril

The string is a palindrome

## Fibonacci Number

```
if nterms <= 0:
    print("Please enter a positive integer")
elif nterms == 1:
    print("Fibonacci sequence ",nterms)
    print(n1)
else:
    print("Fibonacci sequence:")
    while count < nterms:
        print(n1)
        nth = n1 + n2
        # update values
        n1 = n2
        n2 = nth
        count += 1
```

### Output

How many terms? 7

Fibonacci sequence:

0

1

1

2

3

5

8

## **Binary Search**

```
def binary_search(arr, x):  
    low = 0  
    high = len(arr) - 1  
    mid = 0  
    while low <= high:  
        mid = (high + low) // 2  
        if arr[mid] < x:  
            low = mid + 1  
        elif arr[mid] > x:  
            high = mid - 1  
        else:  
            return mid  
    return -1  
arr = [ 2, 3, 4, 10, 40 ]  
x = 10  
result = binary_search(arr, x)  
if result != -1:  
    print("Element is present at index", str(result))  
else:  
    print("Element is not present in array")
```

## **Output**

Element is present at index 3

### Linear Search

```
def linearsearch(arr, x):  
    for i in range(len(arr)):  
        if arr[i] == x:  
            return i  
    return -1  
arr = ['t','u','t','o','r','i','a','l']  
x = 'a'  
print("element found at index "+str(linearsearch(arr,x)))
```

#### Output

element found at index 6

### Largest of three Numbers

```
num1 = float(input("Enter first number: "))  
num2 = float(input("Enter second number: "))  
num3 = float(input("Enter third number: "))  
if (num1 > num2) and (num1 > num3):  
    largest = num1  
elif (num2 > num1) and (num2 > num3):  
    largest = num2  
else:  
    largest = num3  
print("The largest number is",largest)
```

#### Output

Enter first number: 10

Enter second number: 12

Enter third number: 14

The largest number is 14.0

### Printing Symbols in Pattern

```
rows = 5
for i in range(1, rows + 1):
    for j in range(1, i + 1):
        print(j, end=' ')
    print("")
```

### Output

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```