

BASICS OF PYTHON PROGRAMMING

#To find if a string is palindrome or not

```
s1 = input("Enter string to check for palindrome : ")
if ( s1 == s1[::-1] ):
    print("Palindrome")
else:
    print("Not Palindrome")
```

OUTPUT

Enter string to check for palindrome : racecar
Palindrome

#To find number of occurrences of words in a given string.

```
sentence = input("Enter a sentence: ")
words = sentence.split()
wordcount = {}
for word in words:
    if word in wordcount:
        wordcount[word] += 1
    else:
        wordcount[word] = 1
print(wordcount)
```

OUTPUT

Enter a sentence: My name is is Advait
{'My': 1, 'name': 1, 'is': 2, 'Advait': 1}

#To find the sum of diagonal & off diagonal

```
def sumdiagonals(matrix):
    n = len(matrix)
    summaindiagonal = 0
    sumoffdiagonal = 0

    for i in range(n):
        for j in range(n):
            if i == j:
                summaindiagonal += matrix[i][j]
            if i + j == n - 1:
                sumoffdiagonal += matrix[i][j]

    return summaindiagonal, sumoffdiagonal

n = int(input("Enter the size of matrix: "))
matrix = []

for i in range(n):
    row = input(f"Enter row {i + 1} : ").split()
    rows = []
    for element in row:
        rows.append(int(element))
    matrix.append(rows)

summaindiagonal, sumoffdiagonal = sumdiagonals(matrix)
print(f"Sum of main diagonal of the matrix: {summaindiagonal}")
print(f"Sum of off diagonal of the matrix: {sumoffdiagonal}")
```

OUTPUT

Enter the size of matrix: 3
Enter row 1 : 1 2 3
Enter row 2 : 4 5 6
Enter row 3 : 7 8 9
Sum of main diagonal of the matrix: 15
Sum of off diagonal of the matrix: 15

#To print fibonacci series

```
def fibonacciseries(n):  
    a,b = 0,1  
    series = []  
    for i in range(n):  
        series.append(a)  
        a,b = b, a+b  
    return series  
  
n = int(input("Enter the number of terms in Fibonacci Series: "))  
print(fibonacciseries(n))
```

OUTPUT

Enter the number of terms in Fibonacci Series: 7
[0, 1, 1, 2, 3, 5, 8]

#Print prime number in a range m to n

```
def primenumber(no):  
    if no < 2:  
        return False  
    for i in range(2, no):  
        if no % i == 0:  
            return False  
    return True  
  
def primeinrange(m, n):  
    return [ no for no in range(m, n+1) if primenumber(no) ]  
  
m = int(input("Enter the start of the range: "))  
n = int(input("Enter the end of the range: "))  
print(primeinrange(m, n))
```

OUTPUT

Enter the start of the range: 1
Enter the end of the range: 20
[2, 3, 5, 7, 11, 13, 17, 19]