

ILLUSTRATIVE PROGRAMS

Exchange the values of two variables Swap

- Without using temp function:

```
def swap(a,b):
    a,b=b,a
    print("After Swap:")
    print("First number:",a)
    print("Second number:",b)
a=input("Enter the first number:")
b=input("Enter the second number:")

print("Before Swap: ")
print("First number:",a)
print("Second number:",b)
swap(a,b)
```

Output:

```
Enter the first number: 20
Enter the second number: 10
Before Swap:
First number: 20
Second number: 10
After Swap:
First number: 10
Second number: 20
```

Swap - Using temp function:

```
n1=input ("Enter the value of a:")
n2=input ("Enter the value of b:")
print ("Before Swap:")
print ("Value of a:",n1)
print ("Value of b:",n2)
temp =n1
n1=n2
```

```
n2=temp
print("After Swap:")
print("Value of a:",n1)
print("Value of b:",n2)
```

Output:

```
Before Swap:
Value of a: 10
Value of b: 15
After Swap:
Value of a: 15
Value of b: 10
```

Circulate the values of n variables

```
def rotate(L,n):
    newlist=L[ n: ]+L[ :n ]
    return newlist
list = [1,2,3,4,5]
print("The original list is:",list)
mylist=rotate(list,1)
print("List rotated clockwise by 1:",mylist)
mylist=rotate(list,2)
print("List rotated clockwise by 2:",mylist)
mylist=rotate(list,3)
print("List rotated clockwise by 3:",mylist)
mylist=rotate(list,4)
print("List rotated clockwise by 4:",mylist)
```

Output:

```
The original list is: [1, 2, 3, 4, 5]
List rotated clockwise by 1: [2, 3, 4, 5, 1]
List rotated clockwise by 2: [3, 4, 5, 1, 2]
List rotated clockwise by 3: [4, 5, 1, 2, 3]
List rotated clockwise by 4: [5, 1, 2, 3, 4]
```

Distance between two points

```
import math
def distance(x1,y1,x2,y2):
    dx=x2 - x1
    dy=y2 - y1
    dsquare=dx**2 - dy**2
    result=math . sqrt(dsquare)
    return result
```

```
x1=int(input("Enter the value of x1:"))
y1=int(input("Enter the value of y1:"))
x2=int(input("Enter the value of x2:"))
y2=int(input("Enter the value of y2:"))
print("The distance between two points:" ,distance(x1,y1,x2,y2))
```

Output:

Enter the value of x1:2

Enter the value of y1:4

Enter the value of x2:3

Enter the value of y2:6

The distance between two points:2.23