Exercise No:2

1. **Exchange the values of two variables**

   # swapping two numbers – Method 1

   ```
   p = int(input("Enter the First value:"))
   q = int(input("Enter the Second value:"))
   print("The valuesbefore swapping are",p,q)
   temp = p
   p = q
   q = temp
   print("The values after swapping are",p,q)
   ```

   Output:

   ```
   Enter the First value:48
   Enter the Second value:52
   The valuesbefore swapping are 48 52
   The values after swapping are 52 48
   ```

   # swapping two numbers – Method 2

   ```
   s = 59
   t = 16
   print("The values before swapping:",s,t)
   s,t=s,t
   print("The values after swapping:",s,t)
   ```

   Output:

   ```
   The values before swapping: 59 16
   The values after swapping: 59 16
   ```

   # swapping two numbers- Method 3

   ```
   x = 45
   y = 25
   print("The values before swappinfg are",x,y)
   x = x+y
   y = x-y
   ```

```
x = x-y
print("The values after swapping are",x,y)
```

Output:

```
The values before swappinfg are 45 25
The values after swapping are 25 45
```

 # swapping two numbers- Method 4

```
j = 58
k = 46
print("The values before swapping are",j,k)
j = j^k
k = j^k
j = j^k
print("The values after swapping are",j,k)
```

Output:

```
The values before swapping are 58 46
The values after swapping are 46 58
```

2. Circulate the n Variable

```
# Circulate the values of n variables

s = int(input("Enter the a value in the list:"))

list = []

for i in range (0,s):

    element = int(input("Enter the value:"))

    list.append(element)

print("Circulating the list")

for i in range(0,s):

    element_deleted = list.pop(0)
```

```
        list.append(element_deleted)
        print("The circulated list after",i+1,"rotation",list)
```

Output:

Enter the a value in the list:8

Enter the value:5

Enter the value:9

Enter the value:2

Enter the value:1

Enter the value:7

Enter the value:0

Enter the value:3

Enter the value:2

Circulating the list

The circulated list after 1 rotation [9, 2, 1, 7, 0, 3, 2, 5]

The circulated list after 2 rotation [2, 1, 7, 0, 3, 2, 5, 9]

The circulated list after 3 rotation [1, 7, 0, 3, 2, 5, 9, 2]

The circulated list after 4 rotation [7, 0, 3, 2, 5, 9, 2, 1]

The circulated list after 5 rotation [0, 3, 2, 5, 9, 2, 1, 7]

The circulated list after 6 rotation [3, 2, 5, 9, 2, 1, 7, 0]

The circulated list after 7 rotation [2, 5, 9, 2, 1, 7, 0, 3]

The circulated list after 8 rotation [5, 9, 2, 1, 7, 0, 3, 2]

```
# Circulating the values  of n variables


def circulate(c,n):
    for i in range(1,n+1):
```

```
        d = c[i:] + c[:i]
        print("Circulate","=",d)


    return
c = [178,289,324,448,570,698,188,842,956,106]
n = int(input("Enter n:"))
circulate(c,n)
```

Output:

Enter n:6

Circulate = [289, 324, 448, 570, 698, 188, 842, 956, 106, 178]

Circulate = [324, 448, 570, 698, 188, 842, 956, 106, 178, 289]

Circulate = [448, 570, 698, 188, 842, 956, 106, 178, 289, 324]

Circulate = [570, 698, 188, 842, 956, 106, 178, 289, 324, 448]

Circulate = [698, 188, 842, 956, 106, 178, 289, 324, 448, 570]

Circulate = [188, 842, 956, 106, 178, 289, 324, 448, 570, 698]

3. **Distance between two points**

```
# Distance Between Two Points

x1 = int(input("Enter the values of x1:"))
x2 = int(input("Enter the values of x2:"))
y1 = int(input("Enter the values of y1:"))
y2 = int(input("Enter the values of y2:"))
```

```
D1 = (x2-x1)**2

D2 = (y2-y1)**2

result = (D1+D2)**0.5

print("Distance between",(x1,x2),"and",(y1-y2),"is:",result)
```

Output:

```
Enter the values of x1:2

Enter the values of x2:6

Enter the values of y1:4

Enter the values of y2:7

Distance between (2, 6) and -3 is: 5.0
```

4. Area of Triangle using Heron's Formula

```
a = float(input("Enter first side:"))

b = float(input("Enter second side:"))

c = float(input("Enter third side:"))

s = (a+b+c)/2

area = (s*(s-a)*(s-b)*(s-c))**0.5

print("The area of the triangle is %0.2f" %area)
```

Output:

```
Enter first side:5

Enter second side:6

Enter third side:7

The area of the triangle is 14.70
```

5. Area of Circle

```python
def FindArea(r):
    PI = 3.14
    return PI*(r*r);
print("Area is %0.6f" % FindArea(5))
```

Output:

Area is 78.500000