2(a).Exchange of two values

Using naïve approach

Program:

a=int(input("Enter first value:"))

b=int(input("Enter second value:"))

print("values before swapping:",a,b)

temp=a

a=b

b=temp

print(“values after swapping:”,a,b)

Output:

Enter first value:10

Enter second value:20

values before swapping: 10 20

values after swapping:20 10

Using comma operator

Program:

x=int(input("Enter first value:"))

y=int(input("Enter second value:"))

print("values before swapping:",x,y)

x,y=y,x

print("values after swapping:",x,y)

Output:

Enter first value:10

Enter second value:20

values before swapping: 10 20

values after swapping:20 10

Using Arithmetic operator

Program:

a=int(input("Enter first value:"))

b=int(input("Enter second value:"))

print("Values before swapping:",a,b)

a=a+b

b=a-b

a=a-b

Output:

Enter first value:10

Enter second value:20

values before swapping: 10 20

values after swapping: 20 10

Using XOR Gate

Program:

i=int(input("Enter first value:"))

j=int(input("Enter second value:"))

print("Values before swapping:",i,j)

i=i^j

j=i^j

i=i^j

print("Values after swapping:",i,j)

Output:

Enter first value:10

Enter second value:20

values before swapping: 10 20

values after swapping: 20 10

2(b).Circulating list of values

Using in built functions

Program:

n=int(input("Enter no of elements in the list:"))

list=[]

for i in range(n):

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

list.append(a)

print("Circulating the list")

for i in range(n):

list.append(list[0])

list.pop(0)

print("The circulated list after",i+1,"rotation",list)

Output:

Enter no of elements in the list:3

Enter the value:10

Enter the value:20

Enter the value:30

Circulating the list

The circulated list after 1 rotation [20, 30, 10]

The circulated list after 2 rotation [30, 10, 20]

The circulated list after 3 rotation [10, 20, 30]

Using slicing operator

Program:

n=int(input("Enter no of elements in the list:"))

list=[]

for i in range(n):

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

list.append(a)

print("Circulating the list")

for i in range(n):

list=list[1:]+[list[0]]

print("The circulated list after",i+1,"rotation",list)

Output:

Enter no of elements in the list:3

Enter the value:10

Enter the value:20

Enter the value:30

Circulating the list

The circulated list after 1 rotation [20, 30, 10]

The circulated list after 2 rotation [30, 10, 20]

The circulated list after 3 rotation [10, 20, 30]

2(c).Calculate distance between two points

Program:

x1=int(input("Enter x1:"))

x2=int(input("Enter x2:"))

y1=int(input("Enter y1:"))

y2=int(input("Enter y2:"))

d=((x2-x1)\*\*2+(y2-y1)\*\*2)\*\*0.5

print("Distance between two points is ",d)

Output:

Enter x1:3

Enter x2:6

Enter y1:4

Enter y2:8

Distance between two points is 5.0

Farenheit to celsius

Program:

f=int(input("Enter farenheit:"))

c=(f-32)\*(5/9)

print("Celsius:",c)

Output:

Enter farenheit:41

Celsius: 5.0

Apply discount on total of n books

Program:

n=int(input("Enter no of books:"))

list=[]

for i in range(n):

a=int(input("Enter the cost of each book:"))

list.append(a)

c=sum(list)

print("Total cost:",c)

d=c-(c/20)

print("Discounted cost:",d)

Output:

Enter no of books:5

Enter the cost of each book:100

Enter the cost of each book:200

Enter the cost of each book:300

Enter the cost of each book:400

Enter the cost of each book:500

Total cost: 1500

Discounted cost: 1425.0