EXPT. NO.2.a *SWAP TWO NUMBERS*

**AIM:**

To write a program for swapping two numbers

**CODE:**

# By using a temporary variable ‘c’ (temp)

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

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

print("The value before swapping",a,b)

c=a

a=b

b=c

print("The value after swapping",a,b)

**SAMPLE OUTPUT:**

Enter value of a:20

Enter value of b:30

The value before swapping 20 30

The value after swapping 30 20

**CODE:**

# By using comma(,) operator

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

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

print("The value before swapping",a,b)

a,b=b,a

print("The value after swapping",a,b)

**SAMPLE OUTPUT:**

Enter value of a:12

Enter value of b:13

The value before swapping 12 13

The value after swapping 13 12

**CODE:**

# By using the arithmetic operator (+) and (-)

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

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

print("The value before swapping",a,b)

a=a+b

b=a-b

a=a-b

print("The value after swapping",a,b)

**SAMPLE OUTPUT:**

Enter value of a:2

Enter value of b:6

The value before swapping 2 6

The value after swapping 6 2

**CODE:**

# By using the arithmetic operator (\*) and (//)

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

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

print("The value before swapping",a,b)

a=a\*b

b=a//b

a=a//b

print("The value after swapping",a,b)

**SAMPLE OUTPUT:**

Enter value of a:4

Enter value of b:6

The value before swapping 4 6

The value after swapping 6 4

**CODE:**

# By using XOR operator

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

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

print("The value before swapping",a,b)

a=a^b

b=a^b

a=a^b

print("The value after swapping",a,b)

**SAMPLE OUTPUT:**

Enter value of a:50

Enter value of :100

The value before swapping 50 100

The value after swapping 100 50

**RESULT:**

The program to swap two numbers using a temporary variable, arithmetic operators and XOR operator is written.

EXPT. NO.2.b *CIRCULATING THE LIST OF NUMBERS*

**AIM:**

The program to circulate the list of ‘n’ numbers.

**CODE:**

# Method 1

v=int(input("Enter number of values in list"))

L=[ ]

for i in range(0,v):

ele=int(input("Enter the value"))

L.append(ele)

print("Circulating the list")

for i in range(0,v):

dele=L.pop(0)

L.append(dele)

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

**SAMPLE OUTPUT:**

Enter number of values in list4

Enter the value1

Circulating the list

Enter the value3

Circulating the list

Enter the value5

Circulating the list

Enter the value7

Circulating the list

The Circulated list after 1 rotation [3, 5, 7, 1]

The Circulated list after 2 rotation [5, 7, 1, 3]

The Circulated list after 3 rotation [7, 1, 3, 5]

The Circulated list after 4 rotation [1, 3, 5, 7]

**CODE:**

# Method 2 based on the number of rotations

v=int(input("Enter number of values in list"))

L=[ ]

for i in range(0,v):

ele=int(input("Enter the value"))

L.append(ele)

print("Circulating the list")

n=int(input("Enter number of rotations"))

for i in range(0,n):

L=L[1:]+L[:1]

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

**SAMPLE OUTPUT:**

Enter number of values in list4

Enter the value1

Circulating the list

Enter the value3

Circulating the list

Enter the value5

Circulating the list

Enter the value7

Circulating the list

Enter number of rotations4

The Circulated list after 1 rotation [3, 5, 7, 1]

The Circulated list after 2 rotation [5, 7, 1, 3]

The Circulated list after 3 rotation [7, 1, 3, 5]

The Circulated list after 4 rotation [1, 3, 5, 7]

EXPT. NO.2.C DISTANCE BETWEEN TWO POINTS

**AIM:**

To write a program to calculate the distance between two points

**CODE:**

x1=int(input("value of x1:"))

x2=int(input("value of x2:"))

y1=int(input("value of y1:"))

y2=int(input("value of y2:"))

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

print("distance",d)

**SAMPLE OUTPUT:**

value of x1:7

value of x2:5

value of y1:4

value of y2:2

distance 2.8284271247461903

**RESULT:**

The program to calculate the distance between two points is written and executed

EXPT. NO.2.d *FACTORIAL OF A NUMBER*

**AIM:**

To write a program to calculate the factorial of a number.

**CODE:**

n=int(input("Enter the value of n:"))

fact=1

if n<0:

print("The factorial does not exist")

elif n==0:

print("The factorial of 0 is 1")

else:

for i in range(1,n+1):

fact=fact\*i

print("The factorial of",n,"is",fact)

**SAMPLE OUTPUT:**

Enter the value of n:5

The factorial of 5 is 120

EXPT. NO. 2.e *FIND ODD OR EVEN*

**AIM:**

To write a program to find whether a number is odd or even.

**CODE:**

num=int(input("Enter a number:"))

if num%2==0:

print("The number is even")

else:

print("The number is odd")

**SAMPLE OUTPUT:**

Enter a number:6

The number is even

EXPT. NO. 2.f *FIND A YEAR IS LEAP YEAR OR NOT A LEAP YEAR*

**AIM:**

To write a program to check whether a year is leap year or not

**CODE:**

y=int(input("Enter Year:"))

if ((y%400==0) or(y%100!=0) and(y%4==0)):

print("Leap Year")

else:

print("Not a Leap Year")

**SAMPLE OUTPUT:**

Enter Year:1984

Leap Year

EXPT. NO. 2.g *PRIME OR NOT A PRIME*

**AIM:**

To write a program to check whether the entered number is a prime or not a prime number.

**CODE:**

n=int(input("Enter a number:"))

if n>1:

for i in range (2, int(n/2)+1):

if (n%i)==0:

print("The number is not a prime")

break

else:

print("The number is prime ")

else:

print("The number is not a prime number")

**SAMPLE OUTPUT:**

Enter a number:8

The number is not a prime