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
```

EXPT. NO. 2h TOTAL COST OF APPLES

AIM:

To write a program to find the total cost of the apples

CODE:

```
n = int(input ("Enter the number of apples"))
p = int(input("Enter the unit price "))
h = n * p
print(h)
```

SAMPLE OUTPUT:

```
Enter the number of apples10
Enter the unit price 2
20
```

RESULT:

The program to find the total cost of the apples is calculated.

EXPT. NO. 2.I CONVERT CELSIUS TO FAHRENHEIT

AIM:

To write a program to convert the Celsius to Fahrenheit.

CODE:

```
celsius=int(input("Enter the celcius:"))
fahrenheit= (celsius * 1.8) + 32
print('%0.1f degree Celsius is equal to %0.1f degree Fahrenheit' %(celsius,fahrenheit))
```

SAMPLE OUTPUT:

```
Enter the celcius:0
0.0 degree Celsius is equal to 32.0 degree Fahrenheit
```

EXPT. NO.2.J TOTAL COST OF N BOOKS AND 5% DISCOUNT

AIM:

To write a program to calculate the total cost of n books and apply 5% discount

CODE:

```
N=int(input("Enter the number of books purchased"))
i=1
tot=0
if (i<=N):
   p=int(input("Enter the unit price of the book"))
   qty=int(input("Enter the no.of.quantities"))
   sub_total=p*qty
   total=tot+sub_total
   discount=total*5/100
   print("The total price is",discount)
```

SAMPLE OUTPUT:

```
Enter the number of books purchased2
Enter the unit price of the book10
Enter the no.of.quantities2
The total price is 1.0
```

EXPT. NO.2.K SIMPLE INTEREST CALCULATION

AIM:

To write a program to calculate the simple interest calculation

CODE:

```
p=int (input("Enter the principal amount"))
n=int (input("Enter the number of years or months"))
r=int (input("Enter the rate of interest"))
simple_interest=(p*n*r)/100
print("The simple interest is",simple_interest)
```

SAMPLE OUTPUT:

```
Enter the principal amount10000
Enter the number of years or months12
Enter the rate of interest1000
The simple interest is 1200000.0
```