Exchange of the Values

AIM:

To Perform swapping of two values using simple statements and expressions in Python

ALGORITHM-1: (By introducing 3rd variable)

Step 1: Get the value of a

Step 2: Get the value of b

Step 3: Assign the value of temp=0

Step 4: Display The value before Swapping a,b

Step 5: temp=a

Step 6: a=b

Step 7: b=temp

Step 8: Display The value after Swapping a,b

Step 9: Stop

PROGRAM-1:

```
a=int(input("Enter number 1:"))
b=int(input("Enter number 2:"))
temp=0
print("The values before swapping :",a," ",b)
temp=a
a=b
b=temp
print("The values after swapping :",a," ",b)
```

OUTPUT-1:

```
Enter number 1:5
Enter number 2:2
The values before swapping: 5   2
The values after swapping: 2   5
```

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ALGORITHM-2: (By comma operator)

Step 1: Get the value of a

Step 2: Get the value of b

Step 3: Display The value before Swapping a,b

Step 4: a,b=b,a

Step 5: Display The value after Swapping a,b

Step 6: Stop

PROGRAM-2:

```
a=int(input("Enter number 1:"))
b=int(input("Enter number 2:"))
print("The values before swapping :",a," ",b)
a,b=b,a
print("The values after swapping :",a," ",b)
```

OUTPUT-2:

```
Enter number 1:5
Enter number 2:2
The values before swapping: 5   2
The values before swapping: 2   5
```

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ALGORITHM-3: (By arithmetic operator)

Step 1: Get the value of a

Step 2: Get the value of b

Step 4: Display The value before Swapping a,b

Step 5: a=a+b

Step 6: b=a-b

Step 7: a=a-b

Step 8: Display The value after Swapping a,b

Step 9: Stop

PROGRAM-3:

```
a=int(input("Enter number 1:"))
b=int(input("Enter number 2:"))
print("The values before swapping :",a," ",b)
a=a+b
b=a-b
a=a-b
print("The values after swapping :",a," ",b)
```

OUTPUT-3:

```
Enter number 1:5
Enter number 2:2
The values before swapping: 5   2
The values after swapping: 2   5
```

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ALGORITHM-4: (using XOR operator)

Step 1: Get the value of a

Step 2: Get the value of b

Step 4: Display The value before Swapping a,b

Step 5: a=a^b

Step 6: b=a^b

Step 7: a=a^b

Step 8: Display The value after Swapping a,b

Step 9: Stop

PROGRAM-4:

```
a=int(input("Enter number 1:"))
b=int(input("Enter number 2:"))
print("The values before swapping :",a," ",b)
a=a+b
b=a-b
a=a-b
print("The values after swapping :",a," ",b)
```

OUTPUT-3:

```
Enter number 1:5
Enter number 2:2
The values before swapping: 5   2
The values after swapping: 2   5
```

RESULT:

Thus the result for the given Program is obtained.

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Circulating the List of values

AIM:

To Perform Circulating the value in the list using simple statements and expressions in Python

ALGORITHM-1: (Using inbuilt functions)

Step 1: Get the value of n

Step 2: Assign l [ ]

Step 3: Check for the condition for i=0 to n if true goto 4 else goto 6

Step 4: Get value of x

Step 5: append x to l [ ]

Step 6: Get number of rotation a

Step 7: Check for the condition for i=0 to a if true goto 8 else goto 11

Step 8: Assign b = l.pop(0)

Step 9: append b to l [ ]

Step 10: Print the circulated list b

Step 11: Stop

PROGRAM-1:

```
n=int(input("Enter the number of values in the list :"))
L=[ ]
for i in range(0,n):
    x=int(input("Enter the value :"))
    l.append(x)
a=int(input("Enter number of rotation :"))
for i in range(0,a):
    b=l.pop(0)
    l.append(b)
    print("The circulate list is :",l)
```

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OUTPUT-1:

Enter the number of values in the list :3

Enter the value :1

Enter the value :2

Enter the value :5

Enter number of rotation :2

The circulate list is : [2, 5, 1]

The circulate list is : [5, 1, 2]

ALGORITHM-2: (using slicing operator)

Step 1: Get the value of n

Step 2: Assign l [ ]

Step 3: Check for the condition for i=0 to n if true goto 4 else goto 7

Step 4: Get value of x

Step 5: append x to l[ ]

Step 6: Display circulating the list…

Step 7: Get number of rotation a

Step 8: Check for the condition for i=0 to a if true goto 9 else goto 11

Step 9: Compute l=l[1:]+l[:1]

Step 10: Print the circulated list b

Step 11: Stop

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PROGRAM-2:

```
n=int(input("Enter the number of values in the list :"))
l=[]
for i in range(0,n):
    x=int(input("Enter the value :"))
    l.append(x)
print("Circulating the list....")
a=int(input("Enter the number of rotation :"))
for i in range(0,a):
    l=l[1:]+l[:1]
    print("The circulate list is :",l)
```

OUTPUT-2:

```
Enter the number of values in the list :3
Enter the value :1
Enter the value :2
Enter the value :5
Enter number of rotation :2
The circulate list is : [2, 5, 1]
The circulate list is : [5, 1, 2]
```

RESULT:

Thus the result for the given Program is obtained

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Distance between Two points

AIM:

To Calculate distance between Two points using simple statements and expressions in Python

ALGORITHM:

Step 1: Start.

Step 2: Import math.

Step 3: Get the value of x1.

Step 4: Get the value of y1.

Step 5: Get the value of x2.

Step 6: Get the value of y2.

Step 7: Calculate the distance using the formula .

D=(pow(x2-x1,2)+pow(y2-y1,2))**1/2

Step 8: Display the distance D.

Step 9: Stop.

PROGRAM:

```
import math
print("To find the distance between two points")
x1=int(input("Enter x1 value : "))
y1=int(input("Enter x2 value : "))
x2=int(input("Enter y1 value : "))
y2=int(input("Enter y2 value : "))
d=((x2-x1)**2 + (y2-y1)**2)**1/2
print("The distance between the points is",d)
```

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OUTPUT:

To find the distance between two points

Enter x1 value : 40

Enter x2 value : 50

Enter y1 value : 35

Enter y2 value : 90

The distance between the points is 40.311288741492746

RESULT:

Thus the result for the given Program is obtained.

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TO PERFORM ARITHMETIC OPERATIONS ON TWO VALUES

AIM:

To Perform Arithmetic operations on two values using simple statements and expressions in Python

ALGORITHM:

Step 1: Start

Step 2: Get the value of a.

Step 3: Get the value of b.

Step 4: Calculate and print "The ADDITION Value IS!".

Step 5: Calculate and prind "The SUBRACTION Value IS!".

Step 6: Calculate and print "The MULTIPLICATION value is!".

Step 7: Calculate and display" The QUOTIENT VALUE 13:'-

Step 8 Calculate and display "the REMAINDER Value IS!"

Shep 9: Stop.

PROGRAM:

```
a=int(input("Enter value of a : "))
b=int(input("Enter value of b : "))
print("The ADDITTION value is :",a+b)
print("The SUBTRACTION value is : ",a-b)
print("The MULTIPLICATION value is : ",a*b)
print("The QUOTIENT value is : ",a/b)
print("The REMAINDER value is : ",a%b)
```

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OUTPUT:

Enter value of a : 20

Enter value of b : 10

The ADITTION value is : 30

The SUBRACTION value is : 10

The MULTIPLICATION value is : 200

The QUOTIENT value is : 2.0

The REMAINDER value is : 0

RESULT:

Thus the result for the given Program is obtained.

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Weight of the apples

AIM:

To Calculate Weight of the apples using simple statements and expressions in Python

ALGORITHM:

Step 1: Start

step 2: Enter the cost of 1kg Apple (W)

Step 3: Enter the total weight of apples purchased

Step 4: Calculate the total cost of apple in Rs.

Step 5: Display Total cost

Step 6 Stop

PROGRAM:

```
a=int(input("Enter Cost of 1 kg of apple : "))
b=int(input("Enter Total Weight of Apples Bought : "))
print("The total cost of the apple is",a*b,"Rs/-")
```

OUTPUT:

```
Enter Cost of 1 kg of apple : 120
Enter Total Weight of Apples Bought : 5
The total cost of the apple is 600 Rs/-
```

RESULT:

Thus the result for the given Program is obtained

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Fahrenheit into Celsius

AIM:

To Convert Fahrenheit into Celsius using simple statements and expressions in Python

ALGORITHM:

Step 1 : Start

Step 2: Get the Temperature in Fahrenheit (a)

Step 3: Calculate Celsius using the formula c=(F – 32)*5 / 9 .

Step 4: Display Temperature in Celsius c.

Step 5: Stop.

PROGRAM:

```
a=float(input("Enter the Temperature in Fahrenheit: "))
c=( F – 32 )*5 / 9
print("The Temperature in Celsius value is : ",c)
```

OUTPUT:

Enter the Temperature in Fahrenheit : 28

The Temperature in Celsius value is : 82.4

RESULT:

Thus the result for the given Program is obtained.

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Calculate price of a book

AIM:

To Calculate price of a book with discount using simple statements and expressions in Python

ALGORITHM:

Step 1: Start

Step 2: Get the Price of book

Step 4: Calculate discount amount using formula disc = a*5/100.

Step 5: Display the discount amount

Step 6: Display Calculate Bill price using tot = a-disc

Step 7: Display the Bill Price

Step 8 : Stop

PROGRAM:

```
a=int(input("Enter Price Of Book bought : "))
b=int(input("Enter The discount amount : "))
disc=(a*b)/100
tot=a-disc
print("The Discount price is : ",disc)
print("The Bill price is : ",tot)
```

OUTPUT:

```
Enter Price Of  Book bought : 600
Enter The discount amount : 45
The Discount price is :  270.0
The Bill price is :  330.0
```

RESULT:

Thus the result for the given Program is obtained.

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Prime number or not

AIM:

To Calculate Prime number or not using simple statements and expressions in Python

ALGORITHM:

Step 1: Start

Step 2: initialise i=2

Step 4: Get the value to be checked as n

Step 5: Check for the condition i<=n it true goto 6 step 4.1

4.1: Divide I by n and check weather remainder is 0 increase I by 1 and goto step 4

4.2: If false goto step5

Step 7: Display the number as prime and goto step 7

Step 6: Display not prime

Step 8 : Stop

PROGRAM:

```
n=int(input("Enter number :"))
i=2
for i in range(2,n):
    if n%1==0:
        p=True
if True:
    print("Not Prime")
else:
    print("Prime")
```

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OUTPUT:

Enter number :4

Not Prime

Enter number :1

Prime

RESULT:

Thus the result for the given Program is obtained.

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Leap year or not

AIM:

To Calculate price of a book with discount using simple statements and expressions in Python

ALGORITHM:

Step 1: Start

Step 2: Get the Year as y

Step 4: Chech for the condition. if((y%400==0) or (y%100!=0) and (y%4==0)): if true goto step5 else goto step 6

Step 5: Display Leap year

Step 6: Display Not a Leap year

Step 7: Display the Bill Price

Step 8 : Stop

PROGRAM:

```
y=int(input("Enter number :"))
if((y%400==0) or (y%100!=0) and (y%4==0)):
   print("Leap Year")
else:
   print("Not a Leap year")
```

OUTPUT:

Enter number :2020

Leap Year

Enter number :1900

Not a Leap year

RESULT:

Thus the result for the given Program is obtained.

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Simple Interest

AIM:

To Calculate Simple Interest using simple statements and expressions in Python

ALGORITHM:

Step 1: Start.

step 2: Get Principle amount P.

Step 3: Get Rate of Intrest r.

Step 4: Get Time in Years t.

Step 5: Calculate annual interest rate using the formula

A = p (1 + r * t)

Step 6: Display Simple Interest .

Slep 7: Stop.

PROGRAM:

```
p=float(input("Enter the Principle amount  : "))
r=float(input("Enter the rate of interest    : "))
t=float(input("Enter the Time in Years  : "))
A =  ( p * r * t ) / 100
print("The simple interest is Rs. : ",A)
```

OUTPUT:

```
Enter the Principle amount  : 10000
Enter the rate of intreat  : 5.6
Enter the Time in Years t : 5
The simple intrest is Rs. :  280000.0
```

RESULT:

Thus the result for the given Program is obtained.

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