PYTHON PROGRAMS USING SIMPLE STATEMENTS AND EXPRESSIONS

S.No	DATE	TITLE	MARKS		SIGN
			OBS	REC	
2-A	07-12-2022	EXCHANGE OF THE VALUES			
2-B	07-12-2022	CIRCULATING THE LIST OF VALYES			
2-C	07-12-2022	DISTANCE BETWEEN TWO POINTS			
2-D	07-12-2022	TO PERFORM ARITHMETIC OPERATIONS ON TWO VALUES			
2-E	07-12-2022	WEIGHT OF THE APPLES			
2-F	07-12-2022	FARENHEIT TO CELCIUS			
2-G	07-12-2022	CALCULATE PRICE OF BOOK			
2-H	07-12-2022	PRIME NUMBER OR NOT			
2-I	07-12-2022	LEAP YEAR OR NOT			
2-J	07-12-2022	SIMPLE INTREST			
2-K	07-12-2022	ODD OR EVEN NUMBER			
2-L	07-12-2022	FACTORIAL OF A NUMBER			

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

EX.NO.2A SWAPPING OF VALUES

DATE:7.12.22

AIM:

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

ALGORITHM-1:

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

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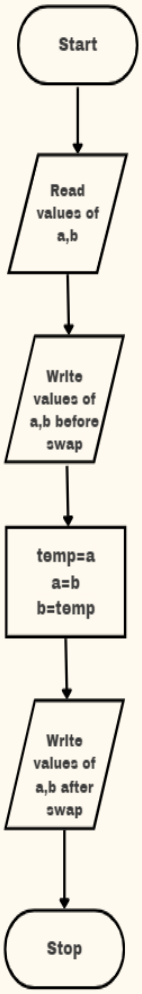
FLOWCHART:



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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 1:8
Enter number 2:2
The values before swapping : 8   2
The values after swapping : 2   8
```

ALGORITHM-2:

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)
```

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ROLL NO : 22CSEB37

OUTPUT 2:

Enter number 1:8

Enter number 2:7

The values before swapping : 8 7

The values after swapping : 7 8

ALGORITHM-3:

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)
```

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OUTPUT 3:

Enter number 1:2

Enter number 2:4

The values before swapping : 2 4

The values after swapping : 4 2

ALGORITHM -4:

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 4:

Enter number 1:4

Enter number 2:6

The values before swapping : 4 6

The values after swapping : 6 4

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EX.NO.2B **CIRCULATE THE VALUES**

DATE:7.12.22

AIM:

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

ALGORITHM-1:

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

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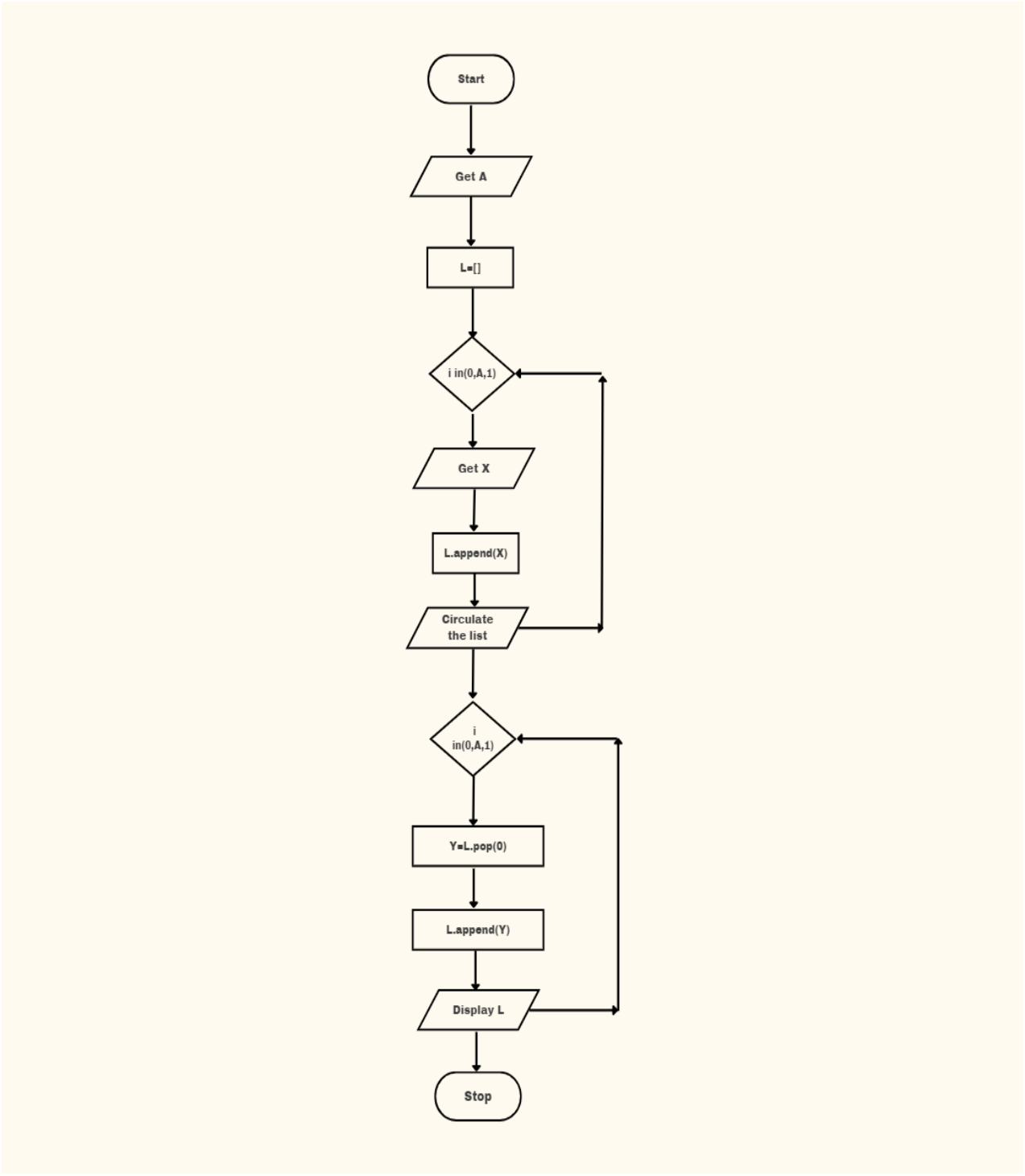
ROLL NO : 22CSEB37

FLOWCHART:



PROGRAM 1:

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```
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)
```

OUTPUT 1:

Enter the number of values in the list :5

Enter the value :2 Enter the value :4 Enter the value :6 Enter the value :8

Enter the value :10

Enter number of rotation :4

The circulate list is : [4, 6, 8, 10, 2]

The circulate list is : [6, 8, 10, 2, 4]

The circulate list is : [8, 10, 2, 4, 6]

The circulate list is : [10, 2, 4, 6, 8]

ALGORITHM 2:

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

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ROLL NO : 22CSEB37

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

Step 10: Print the circulated list b

Step 11: Stop

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 :3
Circulating the list....
Enter the number of rotation :2
The circulate list is : [2, 3, 1]
The circulate list is : [3, 1, 2]
```

EX.NO.2C **DISTANCE BETWEEN TWO POINTS**

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

DATE:7.12.22

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=float((x2-x1)**2+(y2-y1)**2)**(1/2)

Step 8: Display the distance D.

Step 9: Stop.

FLOWCHART:

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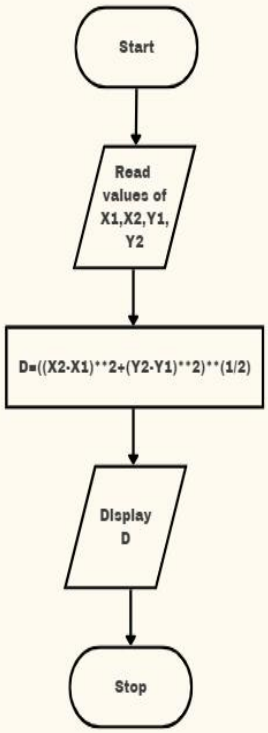

PROGRAM:

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

OUTPUT:

```
To find the distance between two points
Enter x1 value : 6
Enter x2 value : -3
Enter y1 value : 7
Enter y2 value : 8
The distance between the points is 9.055385138137417
```

EX.NO.2D **PERFORM ARITHMETIC OPERATIONS**

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

DATE : 07/12/2022

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 print "The SUBRACTION value is!".

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

Step 7: Calculate and display" The DIVISION value is:'-

Step 8 Calculate and display "the MODULUS value is!"

Step 9: Stop.

FLOWCHART:

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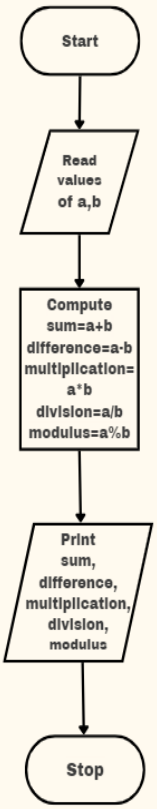
ROLL NO : 22CSEB37



PROGRAM:

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

```
a=int(input("Enter value of a : "))
b=int(input("Enter value of b : "))
print("The ADITTION value is :",a+b)
print("The SUBRACTION value is : ",a-b)
print("The MULTIPLICATION value is : ",a*b)
print("The DIVISION value is : ",a/b)
print("The MODULUS value is : ",a%b)
```

OUTPUT:

```
Enter value of a : 7
Enter value of b : 8
The ADITTION value is : 15
The SUBRACTION value is :  -1
The MULTIPLICATION value is :  56
The DIVISION value is :  0.875
The MODULUS value is :  7
```

EX.NO.2E **WEIGHT OF APPLE**

DATE:7.12.22

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

AIM:

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

ALGORITHM:

Step 1: Start

Step 2: Read the weight of apple

Step 3: Read the cost of apple

Step 4: Calculate total=cost*weight

Step 5: Display Total cost and weight

Step 6: Stop

PROGRAM:

```
a=int(input("Enter the weight in Kg : "))
b=int(input("Enter the amount in Rs : "))
c=(a*b)
print("The cost of apple:",c)
```

OUTPUT:

```
Enter the weight in Kg : 2
Enter the amount in Rs : 100
The cost of apple: 200
```

FLOWCHART:

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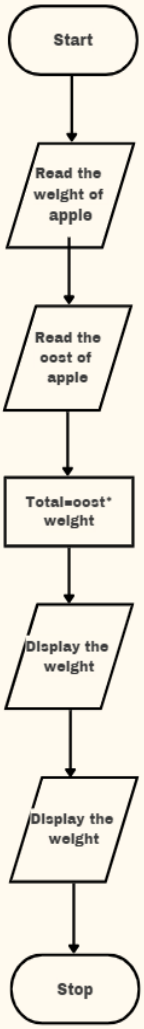

EX.NO.2F **FAHRENHEIT TO CELSIUS**

DATE:7.12.22

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

AIM:

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

ALGORITHM:

Step 1: Start

Step 2: Get the Fahrenheit value in degree a

Step 3: Calculate Celsius using the formula b=(a – 32) 5 / 9 .

Step 4: Display Celsius b.

Step 5: Stop.

PROGRAM:

```
a=int(input("Enter Fahrenheit value: "))
b=( a-32 )*5 / 9
print("The Celsius value is : ",b)
```

OUTPUT:

```
Enter Fahrenheit value: 220
The Celsius value is :  104.44444444444444
```

FLOWCHART:

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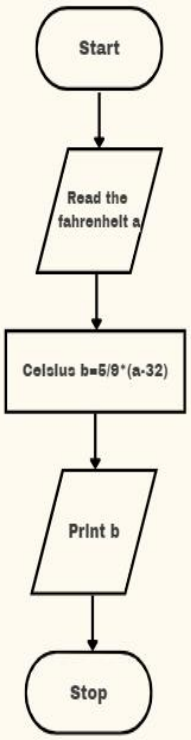
ROLL NO : 22CSEB37



EX.NO.2G **DISCOUNT ON BOOKS**

DATE:7.12.22

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

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 a

Step 3: Read the discount percentage b

Step 4: Calculate discount amount c=(a*b)/100

Step 5: Calculate cost of book d=a-c

Step 6: Display the cost of book d

Step7 : Stop

PROGRAM:

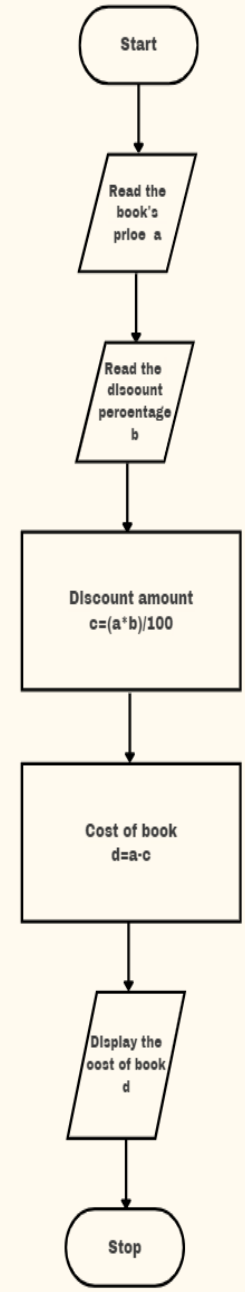
```
a=int(input("Enter the price of book:"))
b=int(input("Enter the discount percentage:"))
c=(a*b)/100
print("Discount amount:",c)
d=a-c
print("Cost of book:",d)
```

OUTPUT:

```
Enter the price of book:500
Enter the discount percentage:10
Discount amount: 50.0
Cost of book: 450.0
```

FLOWCHART:

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37



EX.NO.2H **PRIME NUMBER**

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

DATE:7.12.22

AIM:

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

ALGORITHM:

Step 1: Start

Step 2: Initialise i=2

Step 3: Get the value to be checked as n

Step 4: Check if n>1 if true go to 4.1

4.1: Decide i and check the reminder not equal to 0

4.2 :Increase i by 1 and go to step 4

4.3: If false go to step 5

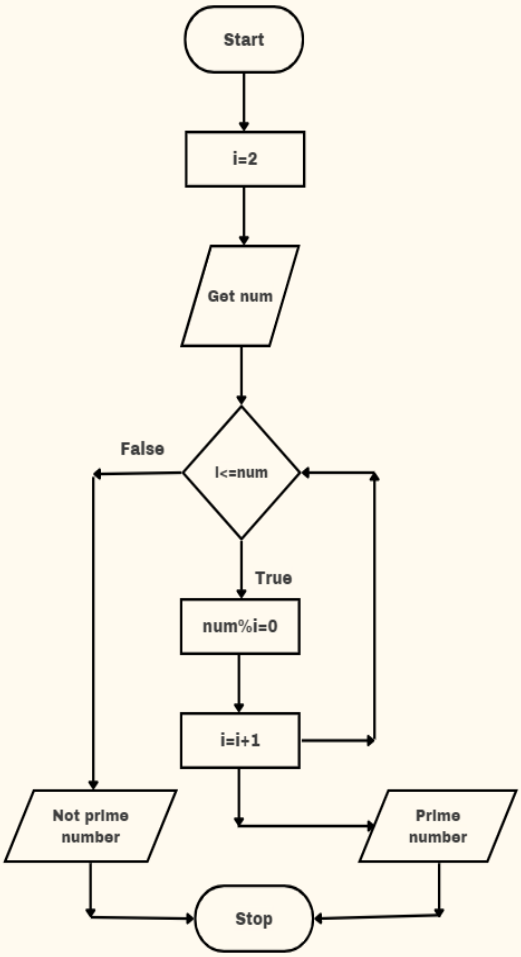
Step 5: Display as not prime number go to step 7

Step 6: Display not prime

Step 7: Stop

FLOWCHART:

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37



PROGRAM:

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```
n = int(input("Enter any number: "))
i=2
if n > 1:
    for i in range(2, n):
        if (n % i) == 0:
            print(n, "is not a prime number")
            break
        else:
            print(n, "is a prime number")
```

OUTPUT:

Enter any number: 5

5 is a prime number

EX.NO.2I **LEAP YEAR**

DATE:7.12.22

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

AIM:

To Calculate whether the given year is leap year or not using simple statements and expressions in Python

ALGORITHM:

Step 1: Start

Step 2: Get the Year as y

Step 3: Chech for the condition. if((y%400==0) or (y%100!=0) and (y%4==0)): if true goto step4 else goto step 5

Step 4: Display Leap year

Step 5: Display Not a Leap year

Step 6 : 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 :2000

Leap year

FLOWCHART:

NAME : C.GURUPRASAD
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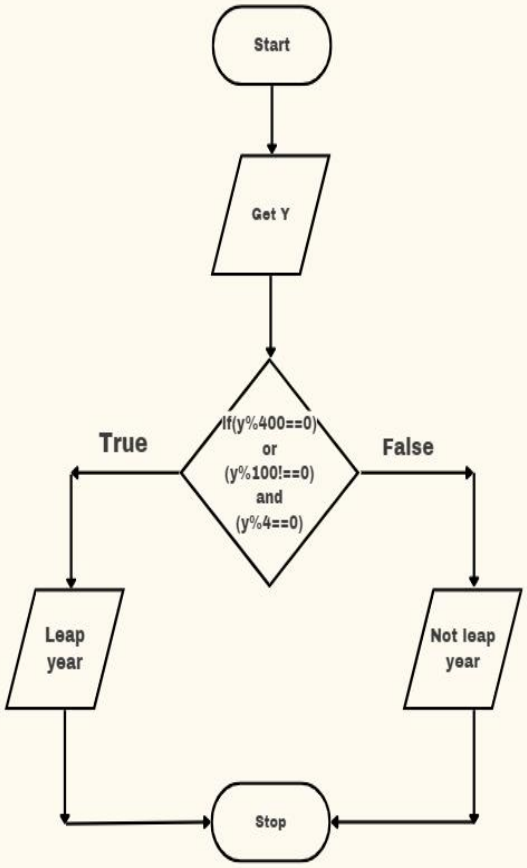

EX.NO.2J **SIMPLE INTEREST**

DATE:7.12.22

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

AIM:

To Calculate Simple Interest using simple statements and expressions in Python

ALGORITHM:

Step 1: Start.

Step 2: Get Principle amount a.

Step 3: Get Annual Interest rate b.

Step 4: Get Time in Years c.

Step 5: Calculate Simple interest,si=a*b*c/100

Step 6: Display Simple interest

Step 7: Stop.

PROGRAM:

```
a=float(input("Enter the Principle  amount:"))
b=float(input("Enter the rate of interest rate:"))
c=float(input("Enter the time in Years:"))
si =(a*b*c)/100
print("The Simple interest is :",si)
```

OUTPUT:

```
Enter the Principle  amount:50000
Enter the rate of interest rate:2
Enter the time in Years:4
The Simple interest is : 4000.0
```

FLOWCHART:

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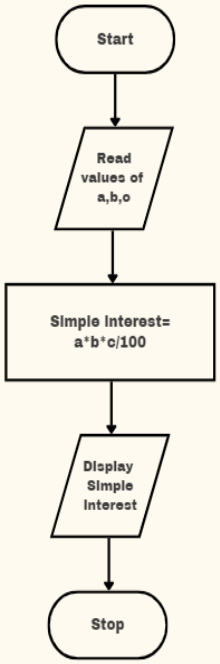

EX.NO.2K **ODD OR EVEN NUMBER**

DATE:7.12.22

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

AIM:

To Calculate whether a number is odd or even using simple statements and expressions in Python

ALGORITHM:

Step 1: Start.

Step 2: Get the number n

Step 3: Check condition n%2==0

3.1: If true display as even number

3.2: Or false display as odd number

Step 4: Stop.

PROGRAM:

```
n=int(input("Enter the number :"))
if(n%2==0):
   print("Even number")
else:
   print("Odd number")
```

OUTPUT:

```
Enter the number :46
Even number
```

FLOWCHART:

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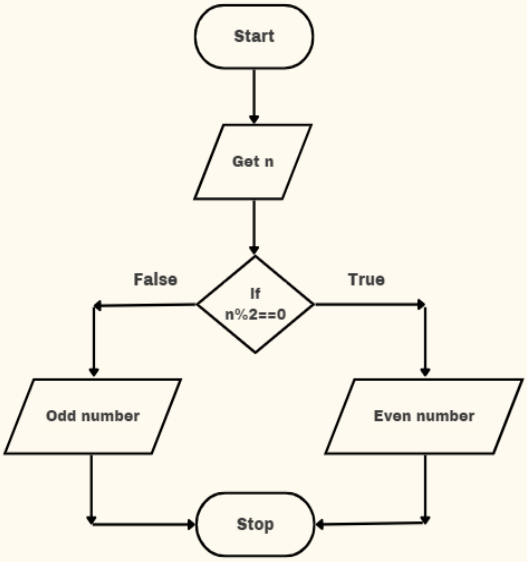

EX.NO.2L **FACTORIAL OF NUMBER**

DATE:7.12.22

NAME : C.GURUPRASAD
ROLL NO : 22CSEB37

AIM:

To Calculate factorial of the number using simple statements and expressions in Python

ALGORITHM:

Step 1: Start.

Step 2: Get the value of n

Step 3: Initialize i=1 and f=1

Step 4: Repete steps till i = n

4.1: f = f * i

4.2: i = i+1

Step 5: Display f.

Step 6: Stop.

FLOWCHART:

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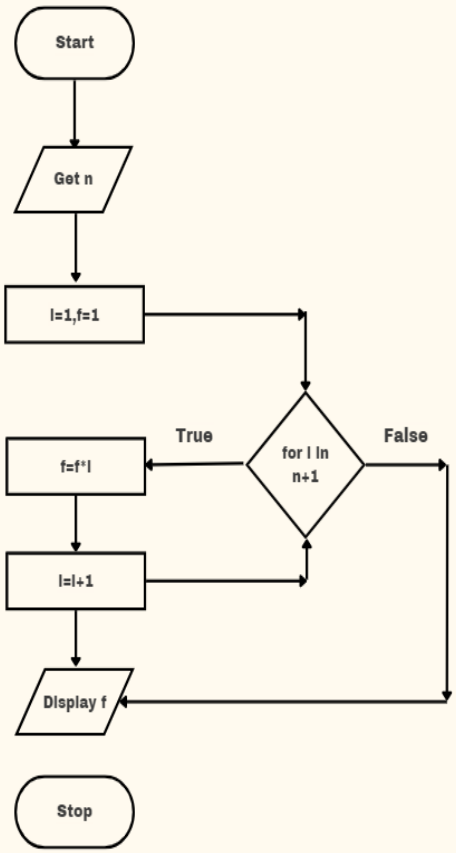

NAME : C.GURUPRASAD
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PROGRAM:

```
n=int(input("Enter a number for factorial : "))
i=1
f=1
for i in range(1,n+1):
 f=f*i
 i=i+1
print("The factorial of the number",n," is ",f)
```

OUTPUT:

```
Enter a number for factorial : 8
The factorial of the number 8  is  40320
```

RESULT:

Thus, the python programs are executed and outputs are verified successfully.

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