Experiment No. 10

Input Specification:

limit up to which prime numbers from 1 to be printed as int

Output Specification:

Message displaying all prime numbers from 1 up to specified limit

Declaration:

limit as int to store upper limit up to which to print prime numbers
num as loop variable that starts at 2 and runs up to limit as int
flag as boolean flag indicating number is prime or not as int
b to store floored value of square root of num as int
d as loop variable to check divisibility from 2 to b for every num as int

Algorithm:

Step 1: Declare num, limit, b, d as int variables.

Step 2: Declare flag as int and initialize it with 1

Step 3: Display message to "Enter Limit value"

Step 4: Store limit value in limit variable

Step 5: Display messages " Prime numbers between 1 and limit are as follows"

Step 6: Start a for loop that runs steps 7 to 13 from num=2 up to limit each time increasing num by 1

Step 7: Evaluate b=(int)(sqrt(num))

Step 8: Set flag = 1

Step 9: Start a for loop that runs steps 10 to 12 from d=2 up to b each time increasing d by 1

Step 10: Check if num%d==0 then go to Step 11 otherwise go to Step 9

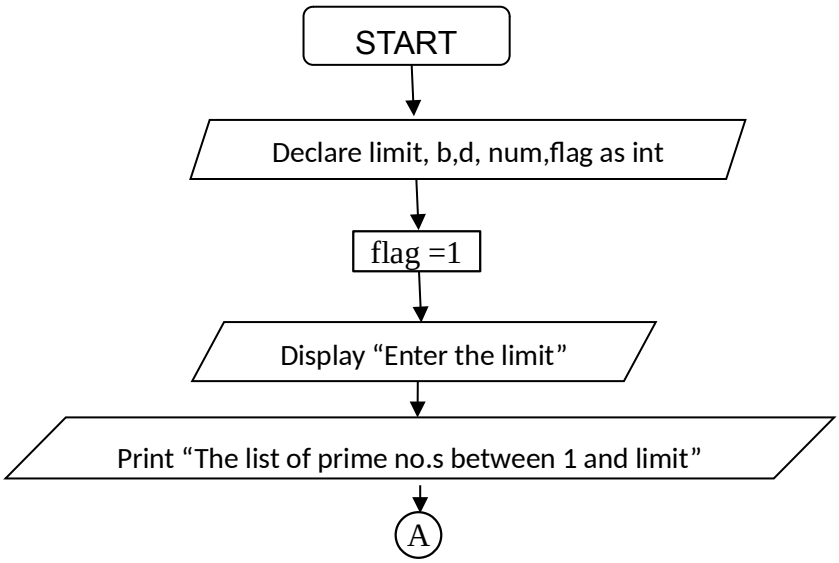
Step 11: Set flag = 0

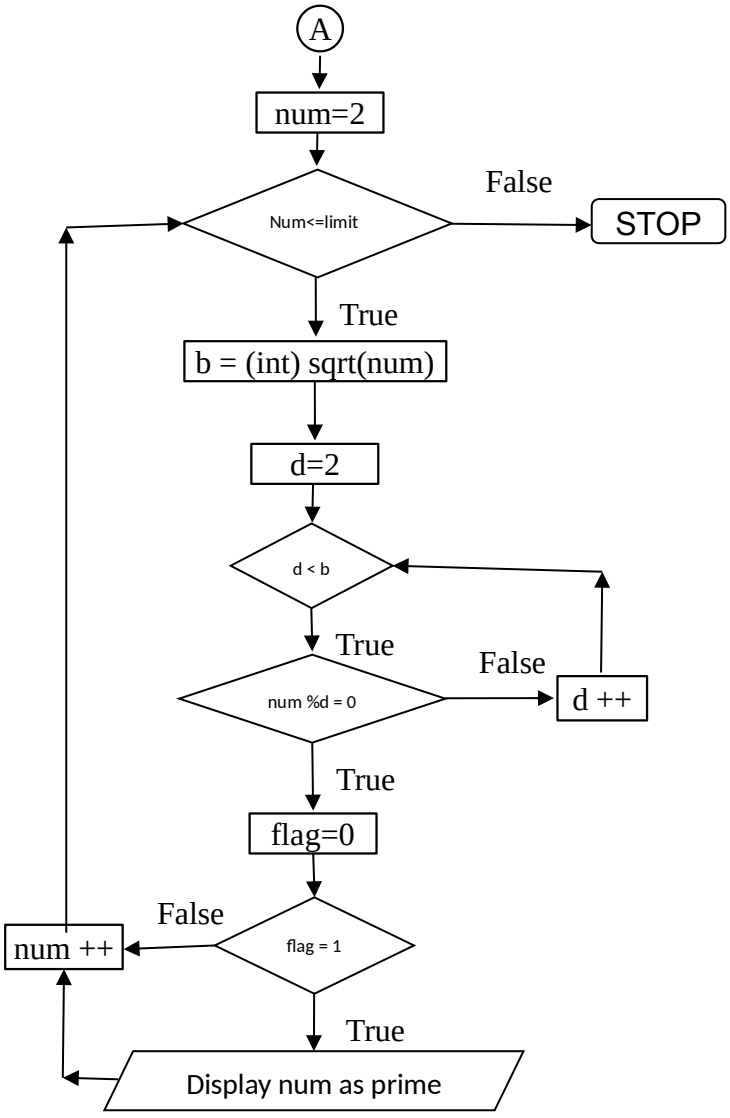
Step 12: got to Step 13

Step 13: Check if flag=1 print num as prime

Step 14: Stop

Flowchart:




A
num=2
Num<=limit
False
STOP
True
b = (int) sqrt(num)
d=2
d < b
True
num %d = 0
False
d ++
True
flag=0
flag = 1
False
num ++
True
Display num as prime