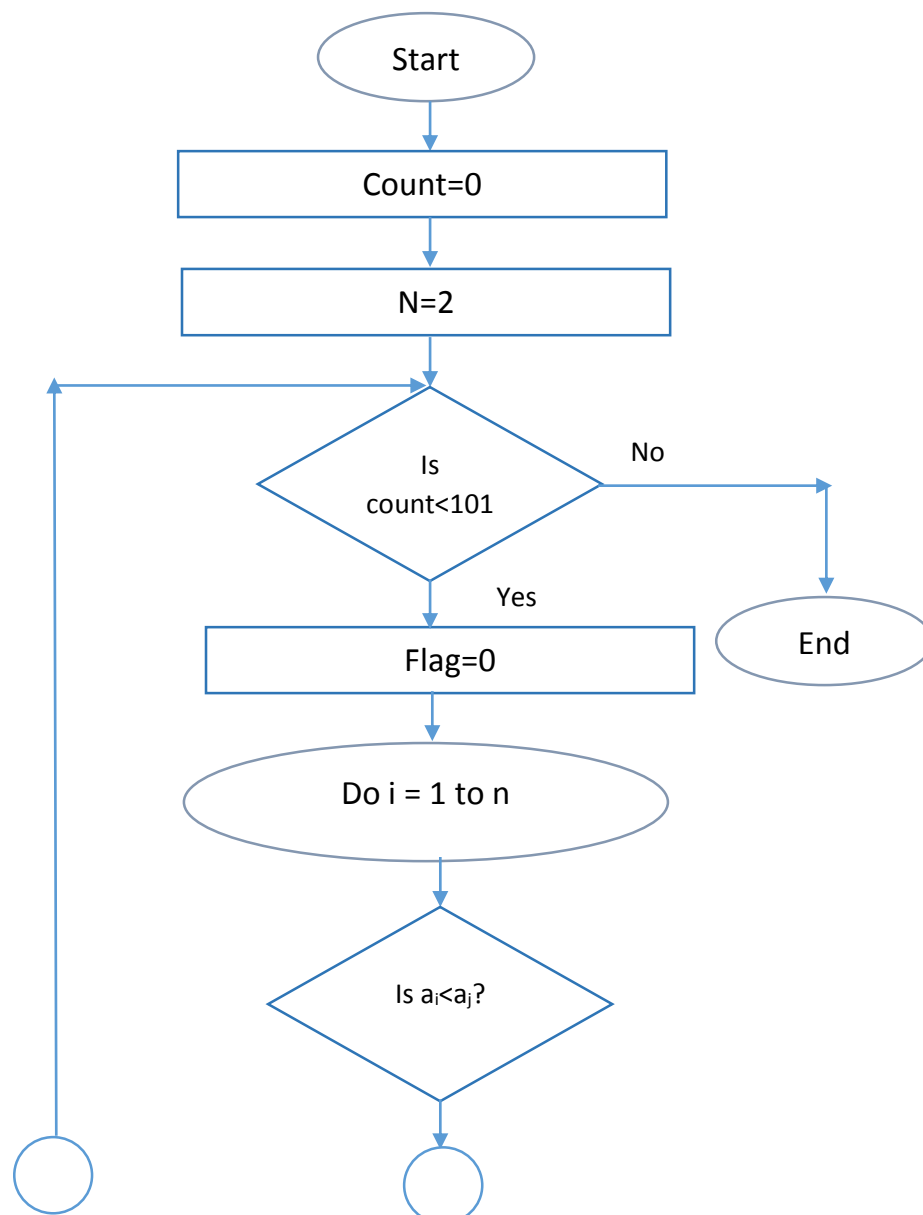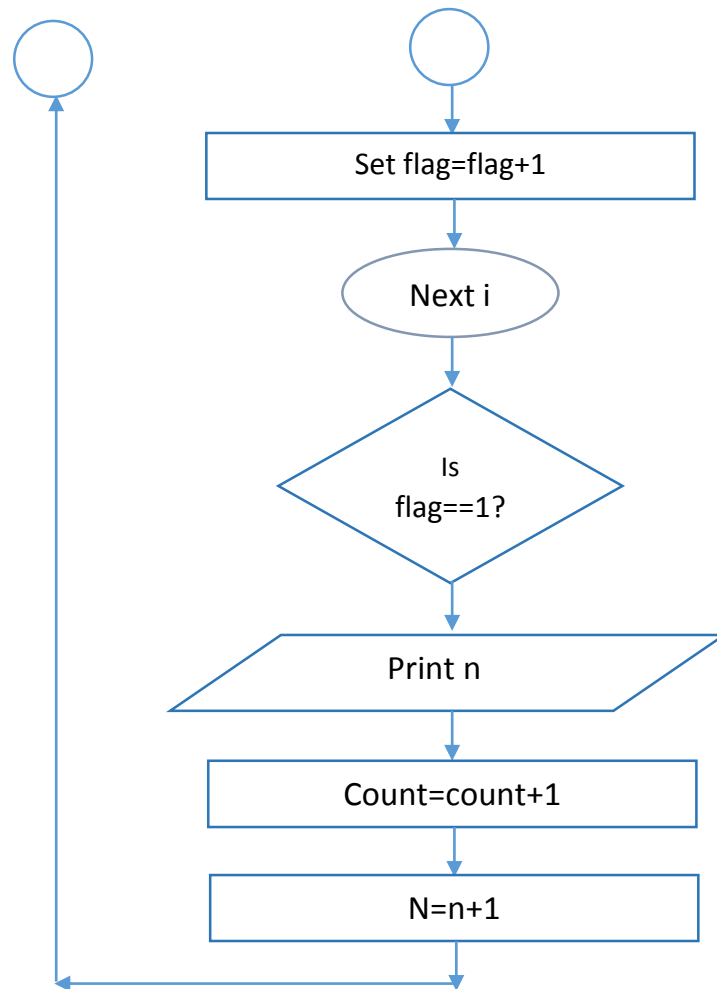**Aim**: To print the first 10 prime nos.

Algorithm:

1. Set count=0.
2. Set n=2.
3. Do Until count>100
   > Set Flag=0.
   > Begin For j=1 to sqrt(n)
   > > If n is divisible by j
   > > > Set flag=flag+1.
   > End For j.
   > If flag==1
   > > Print n.
   > count=count+1.
   > n=n+1.
4. End.

Flow Chart:

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         ▼
              ┌──────────────────┐
              │     Count=0      │
              └────────┬─────────┘
                       ▼
              ┌──────────────────┐
              │       N=2        │
              └────────┬─────────┘
                       ▼
              ╱────────────────╲        No
             ╱        Is         ╲──────────────┐
             ╲    count<101      ╱               ▼
              ╲────────┬────────╱            ┌────────┐
                       │ Yes                 │  End   │
                       ▼                     └────────┘
              ┌──────────────────┐
              │      Flag=0      │
              └────────┬─────────┘
                       ▼
              ╭──────────────────╮
              │   Do i = 1 to n  │
              ╰────────┬─────────╯
                       ▼
              ╱────────────────╲
             ╱    Is aᵢ<aⱼ?     ╲
             ╲                  ╱
              ╲────────┬───────╱
                       ▼
                      ( )
```

Is count<101

No

Yes

End

Flag=0

Do i = 1 to n

Is $a_i < a_j$?

```
        ( )                    ( )
         |                      |
         |                      v
         |          +---------------------------+
         |          |      Set flag=flag+1       |
         |          +---------------------------+
         |                      |
         |                      v
         |              (    Next i    )
         |                      |
         |                      v
         |                  /         \
         |                 /    Is      \
         |                <   flag==1?   >
         |                 \            /
         |                  \         /
         |                      |
         |                      v
         |           /---------------------\
         |          /      Print n          /
         |         /-----------------------/
         |                      |
         |                      v
         |          +---------------------------+
         |          |       Count=count+1        |
         |          +---------------------------+
         |                      |
         |                      v
         |          +---------------------------+
         |          |         N=n+1             |
         |          +---------------------------+
         |                      |
         +<---------------------+
```

Program:

```cpp
//To print the first 10 prime nos.
#include<iostream>
#include<cmath>
using namespace std;
int prime(int n);   //function for checking if the no. is prime or not
int prime(int n)
{
   int i,flag=0;            //i for loop(dividing the no. with 1 to sqrt of the no. and a variable called flag
   for (i=1;i<=sqrt(n);i++)   //a no. is prime if it is divisible by only 1 when divided by nos. upto the
root of the no.
   {
     if (n%i==0)            //if the no. is divisible by i
     {
        flag+=1;        //increment flag
     }
   }
   if (flag==1)            //if flag=1 i.e the no. is divisible by only 1 when divided by nos. upto the root
of the no.
   return 1;                //return 1;
   else
   return 0;
```
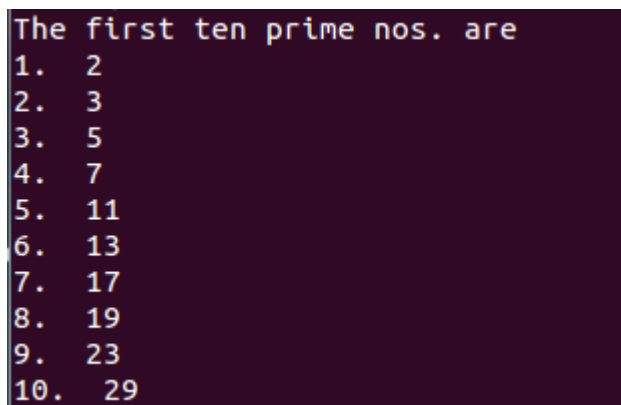
```cpp
}
int main()
{
    int n=2,j,count=1;        //n i.e the no. to be checked if it is prime or not(we start it by 2 as 1 is
nota prime no.) and count keeps track of the no. of prime nos. detected
    cout<<"The first ten prime nos. are"<<endl;
    while (count<11)
    {
        j=prime(n);           //check if n is prime
        if (j==1)             //if it is prime, display n and increment count
        {
            count++;
            cout<<count-1<<".  "<<n<<endl;;
        }
        else                  //else don't increment count
        count=count;
        n++;                  //increment n(so that the next no. can be checked and so on
    }
    return 0;
}
```

Output:

```
The first ten prime nos. are
1.   2
2.   3
3.   5
4.   7
5.   11
6.   13
7.   17
8.   19
9.   23
10.  29
```