राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली
National Institute of Technology Delhi
(An autonomous Institute under the aegis of Ministry of Education, Govt. of India)

Object oriented Programming

WEEK 3 ASSIGNMENT 3

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Year : 2nd year

Semester :4th Sem

Group : 1

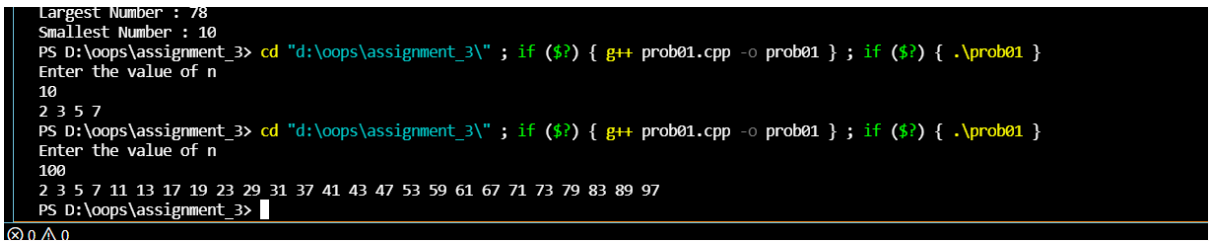
Q 1. Write a c++ program to generate all the prime numbers between 1 and n, where n is the value supplied by the user.

Code:

```
#include <iostream>

using namespace std;

class prime_numbers
```

```
{
public:
int n;
void print_prime()
{
for(int i=2;i<=n;i++)
{
    int isprime = 0;
    for(int j=2;j<=i/2;j++)
    {
        if(i%j==0){
            isprime =1;
            break;
        }
    }
    if(isprime==0 && n!=1)
    cout<<i<<" ";
}
}

};

int main()
{   int m;
    cout<<"Enter the value of n\n";
    cin>>m;

    prime_numbers input;
    input.n = m;

    input.print_prime();
    return 0;

}
```

Output:



Q 2. Write a c++ program to find the largest and smallest number from a list. Take the input for the list from the user . Implement it in O(n) time.

Code:

```
#include<iostream>
using namespace std;

class number
{
    public:
    void findnumber(int *a,int n)
    {
        int min=a[0];
        int max=a[0];
        for(int i=0;i<n;i++)
        {
            if(a[i]>max)
            {
                max=a[i];
            }
            if(a[i]<min)
            {
                min=a[i];
            }
        }
        a[0]=max;
        a[1]=min;
    }
};
int main()
{
    cout << "Enter the size of Array : ";
    int n;
    cin >> n;
    int a[n];
    cout << "Enter the values of Array : "<< endl;
    for(int i=0;i<n;i++)
    {
        cout << i << " : ";
        cin >> a[i];
    }
    number p;
    p.findnumber(a,n);
    cout << "Largest Number : " << a[0] << endl;
    cout << "Smallest Number : " << a[1] << endl;
```

```
    return 0;
}
```

Output:

```
PS D:\oops\assignment_3> cd "d:\oops\assignment_3\" ; if
Enter the size of Array : 5
Enter the values of Array :
0 : 10
1 : 45
2 : 65
3 : 78
4 : 15
Largest Number : 78
Smallest Number : 10
```