

Aim:

Implement a program that takes an integer n input from the user and prints all the prime numbers from 2 to n .

Note: A prime number is divisible only by 1 and itself.

Input format:

- The input contains a positive integer n .

Output Format:

- Contains the list of prime numbers up to n

Example:

Input:

10

Output:

[2, 3, 5, 7]

Constraints:

- The input n should be a positive integer greater than or equal to 2.
- The algorithm should be efficient, aiming for a time complexity of approximately $O(n * \sqrt{n})$ where n is the input number.
- The algorithm should handle large inputs reasonably well, without consuming excessive memory or taking an unreasonable amount of time to execute.

Source Code:

CTP32252.py

```
a=int(input())
list=[]
for i in range(2,a,1):
    for j in range(2,i,1):
        if i%j==0:
            break
    else:
        list.append(i)
print(list)
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
10
[2, 3, 5, 7]

Test Case - 2
User Output
20

[2, 3, 5, 7, 11, 13, 17, 19]

Test Case - 3

User Output

30

[2, 3, 5, 7, 11, 13, 17, 19, 23, 29]
