**Prime number(using sieve of eratosthenes)**

Declare an array of size [input+1]

From index two mark all the filelds as True until end(size-1) //Assuming all are primes

Loop through the array for N/2 times:

If(pointer==T):

Loop fro pointer\*pointer to end and increment by pointer value:

Mark all its multiples as F

Print the T values from the array //The primes

Optimizations:

1. Instead of iterating for n/2 times iterate for sqrt(n) times
2. Always mark composites from pointer\*pointer

**Code:**

**import math**

**prime=['','']**

**for i in range(2,int(input())+1):**

**prime.append(True)**

**for j in range(2,int(math.sqrt(len(prime)-1))+1):**

**if(prime[j]==True):**

**for k in range((j\*j),len(prime),j):**

**prime[k]=False**

**for i in range(2,len(prime)):**

**if prime[i]==True:**

**print(i," ",end='')**