

Count Prime number

$n \rightarrow [2 \text{ to } \sqrt{n}]$
divide by this to check
if prime

$n = 16 \rightarrow [2 \text{ to } 4] \Rightarrow NP$

```
for (i=2; i*i<=n; i++) {  
    if (n%i == 0)  
        return not prime
```

}

return prime

if range mein karna hai there are 2 approaches

(i) Brute force

```
for (n=2; n<=N; n++) {
```

isPrime = true;

```
    for (i=2; i*i<=n; i++) {
```

if (n%i == 0)

isPrime = false

break;

}

return "Prime"

}

(ii) Sieve of Eratosthenes

assume all nos are prime

eg: if you're at 2 then declare
all multiples as non prime

so range mein kam numbers hai

```
vector<bool> isPrime(n+1, true);
```

```
for (i=2; i<n; i++) {
```

if (isPrime[i]) {

ans++

```
        for (j=i*2; j<n; j=j+i) {
```

isPrime[j] = false;

}

}

}