Sieve

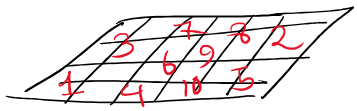
Primality Testing: Decide whether N is prime or not

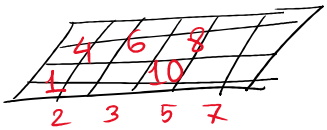
Prime Generation: Generates primes within a specific range

1, 3, 5, 7, ...

→ Sieve of eratosthenes

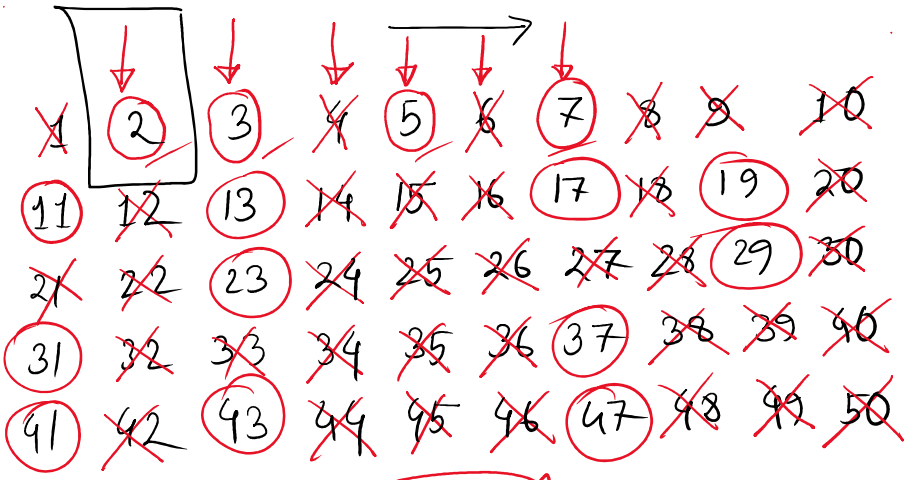
1021th





$N\sqrt{N}$

3



1 ~ 200

$\sqrt{121} = 11$ → 1 ~ 10

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for(i=1; i<=4; i++)
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22%1==0

1, 22

2 — 2, 11

3 → x

4 → x

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N=50
bool marked[100];
for(int i=2; i<=N; i++)
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$i \le \sqrt{N}$

$\Rightarrow i^2 \le N$

$[2 \sim N] \to \frac{N}{2}$

$[3 \sim N] \to \frac{N}{3}$

$[4 \sim N] \to \frac{N}{4}$

$\vdots$

$[N \sim N] \to \frac{N}{N}$

$\frac{N}{1} + \frac{N}{2} + \frac{N}{3} + \frac{N}{4} + \frac{N}{5}$

$= N\left(\frac{1}{1} + \frac{1}{2} + \frac{1}{3} + \frac{1}{4}\right)$

$= N(\log_2 N)$

$\lim_{N \to \infty} \sum_{i=1}^{N} \frac{1}{i} = l$

$$\log_2(N)$$

$$+ \cdots + \frac{N}{N}$$

$$+ \cdots + \frac{1}{N})$$

$$N$$

5×10^{8}

$[N \sim N] \rightarrow \left(\frac{N}{N}\right) = N(\log_2 \quad)$

$\frac{N}{2} + \frac{N}{3} + \frac{N}{5}$

$\rightarrow N \log_2$

$$+ \frac{N}{7}$$

$$(\log_2 N)$$