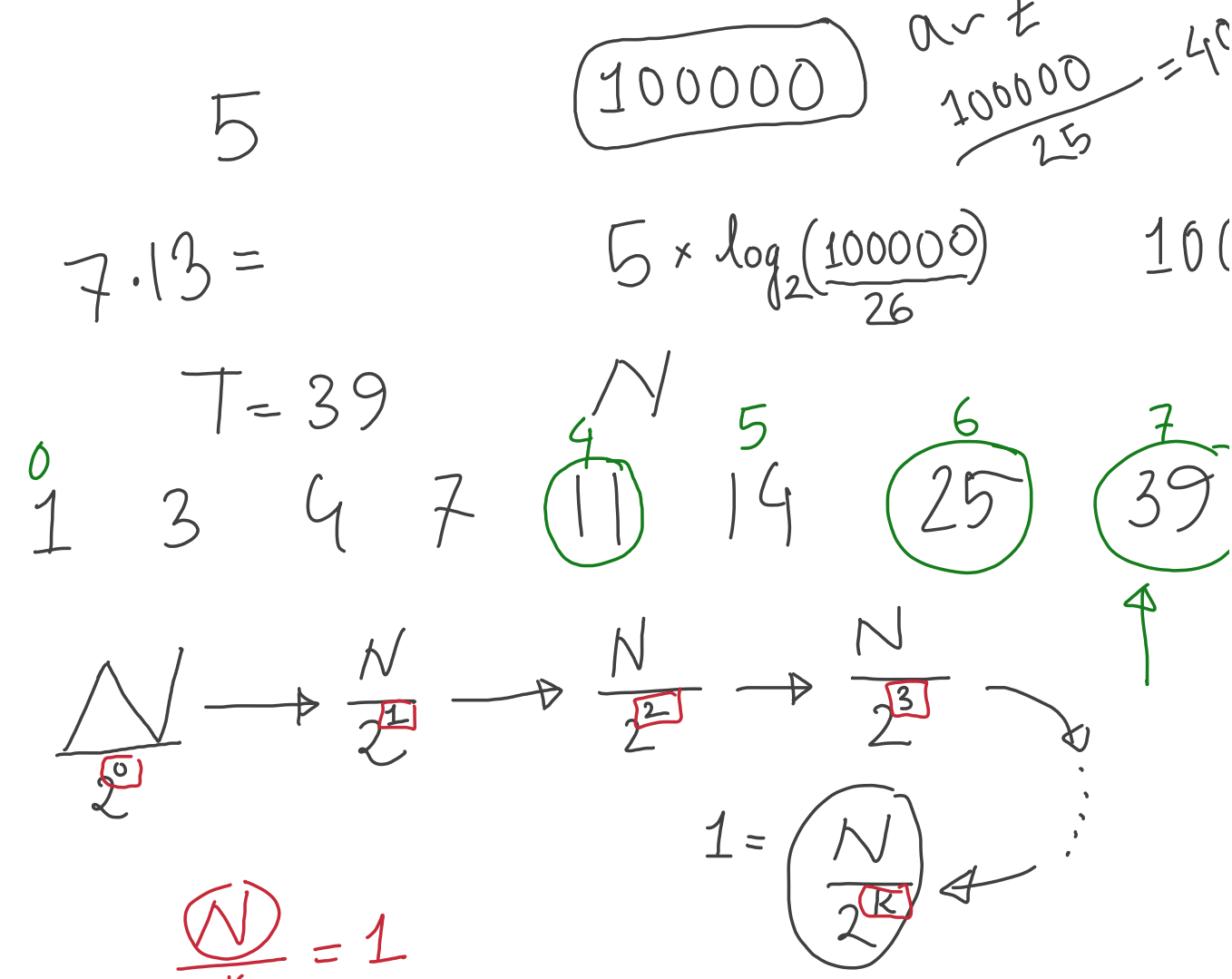
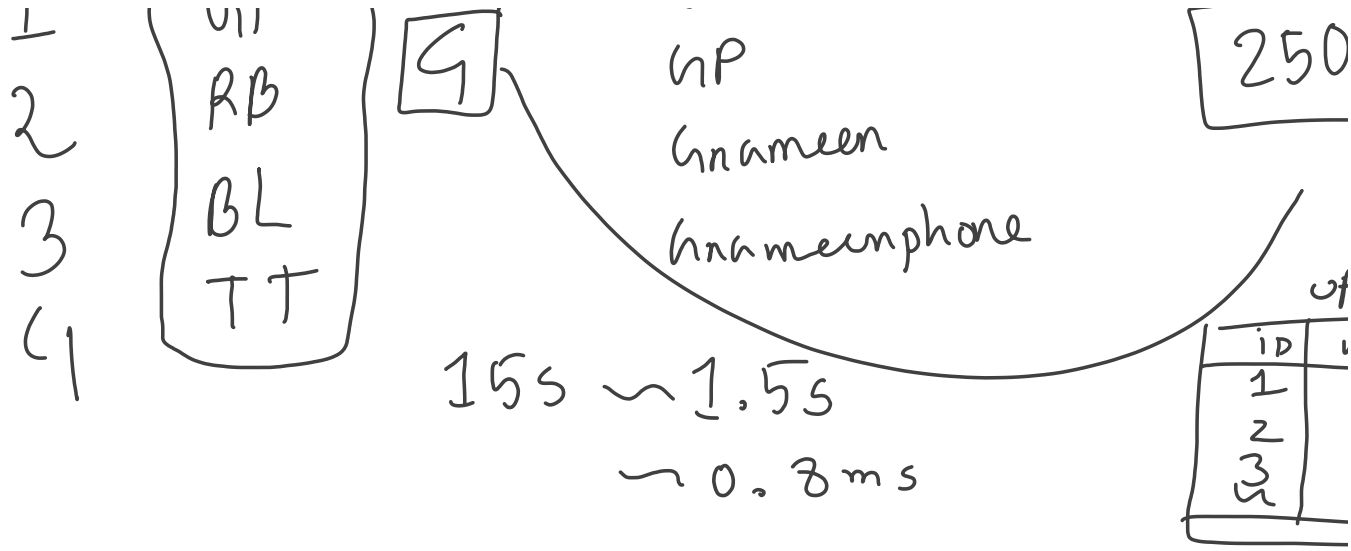
Class 05

Saturday, July 16, 2022 10:01 PM

Binary Search → Searching Technique





Passive Binary Search

[1, 10^1

0 0 0 0 0 0 0 | | | | | | | | | | |

7

0/1 ← getV

~~0 1 0 1~~

$\log_2(10^{18}) \simeq 60$

Ugly number → 2 অথবা 3 দিয়ে ভাগ ক

2, 3, 4, 6, 8, 9, 10, 12, 14, 15, 16, ...

L = 1, R = 100 k^th ugly n

k = 10 M = 50 1 ≤ k ≤ 1

L = 1, R = 50 1 ~ 50 —

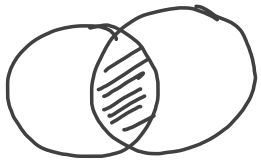
M = 25 —

$\frac{16}{2} + \frac{16}{3} - \frac{16}{6}$

$8 + 5 - 2$

$L = 1, R = 25$

$M = 13$



$L = 14, R = 25$

$M = 19$

$L = 14, R = 19$

$M = 16$

$L = 14, R = 16$

$M = 15$

$L = 14, R = 15$

$M = 14$

$L = 15, R = 15$

$15 + 19 \rightarrow 17$

$15/2 = 7 + 9$

$\left(\frac{L+R}{2}\right)$

$L + \left(\frac{R-L}{2}\right)$

[1, 10

0 1 2 3 3 4 4 5 6 7 7 8

1 2 3 4 5 6 7 8 9 10 11 12

1 2 2 2 5 6 +

Pollard Rho

LB(3) =

$$3\sqrt{N} \times \log N$$