44, 2016

i : 1 → n

j : 1 → i

d x = r

ct = d

= ct = r^j

n = 20, r = 2

$2^1 + 2^2 + 2^3 + 2^4 + 2^5 \cdots 2^{20}$

$= 2^{21} - 2$

= 2097150

$2^0 + \cdots 2^n = 2^{n+1} - 1$

$2^1 + \cdots + 2^n = 2^{n+1} - 2$

45, 2016

$$f3(a) = \begin{cases} a, & a < 10 \\ f3(a/10) \cdot 3 + f3(a \bmod 10) & \text{else} \end{cases}$$

$f3(143) \to f3(14) \cdot 3 + f3(3)$

$\to f3(1) \cdot 3 + 0$

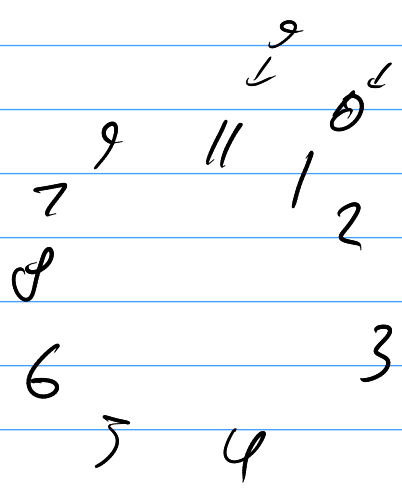
$= (f3(1) \cdot 3) \cdot 3 + f3(2)$

$= 1 \cdot 3 \cdot 3 + 2$

$= 11$

16, 2016

$$w[i] = \begin{cases} 0, & i \le 0 \\ w[i-1] + k[a[i]] \end{cases}$$



w[1]

w[0] = 0
w[1] = 0 + 1×2 = 2
w[2] = 2 + 2×3 = 8
w[3] = 8 + 3×4 = 20
w[4] = 20 + 4×5 = 40
w[5] = 40 + 5×6 = 70
w[6] = 70 + 6×8 = 118
w[7] = 118 + 8×7 = 174
w[8] = 174 + 7×9 = 237

17, 2016

b = 1, 2, 3, 4, ...

acn ... deb

1	2	3	4	5	6	7	8	9
Sund = 1,	3,	6,	10,	15	21	28	36	45

10	11	12	13	14	15
55	66	78	91	105	

13 → 13 + 66

penjumlahan B (1 kali)

Sebelumnya: a = 13 + 52

= 65

nilai akhir B = 15

B terakhir yang dijumlah ke A = 14

N minimum = a + b

= 118

4 9 , 2016

$$\text{naon} = \begin{cases} 1, & y = 0 \\ x, & y = 1 \\ \text{naon}(x, \frac{y}{2}) \cdot \text{naon}(x, \frac{y}{2}) \cdot \text{naon}(x, y \% 2) \end{cases}$$

→ Fast exponentiation

perpangkatan cepat

exp = 1

a^6 = for (i = 1 , i ≤ 6 ; i ++)

exp *= a

↳ Kompleksitas = O(N)

"lambat"

Cara yang lebih cepat = fast exponentiation

O(log N)

$a^8 = a^4 \times a^4$

$a^4 = a^2 \times a^2$

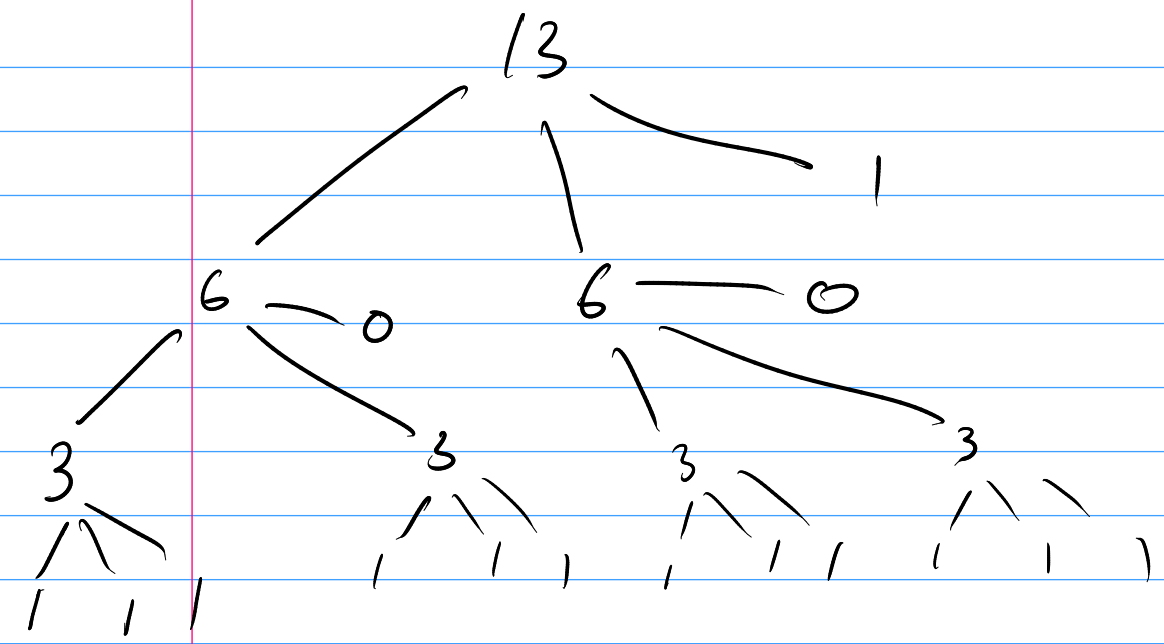
$a^2 = a \times a$

$a = a$

$a^0 = 1$

$a^9 = a^4 \times a^4 \times \underline{a}$

$a^b = a^{b/2} \times a^{b/2} \times \underline{a}$ bila b ganjil



22 Memoryzation

x = 105 , y = 79

i=0, x = 79, y=105

i=1, x=105, y=79

∴ i = 1234

39, 2015

$$Sum\begin{cases} x, & x<7 \\ Sum(x\%7) + Sum(x/7), & \cdot 7 \end{cases}$$

Sum(71) → Sum(1) + Sum(10) ·7

→ Sum(3) + Sum(1) ·7

1 + (3+1)·7 = 21 ×7

= 147

$21 = 3 \times 7$

$\text{Swap}(x\%7) = 3$, $\text{Swap}(x/7) \cdot 7 = 7$

$\text{Swap}(x\%7) = 1$, $\text{Swap}(x/7) \cdot 7 = 21$

$\text{Swap}(x/7) = 3$

$\rightarrow \text{Swap}(x/7) = 1$

$x/7 = 1$

$x = 7 \cdots 13$

$x\%7 = 3$

$= 10$

$\rightarrow \text{Swap}(x/7) = 3$

$x/7 = 3$

$x = 21 \cdots 27$

$x\%7 = 1$

$\boxed{x = 22}$

4月, 2015

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

1 3 6 10 15 21 28 36 45 55

20 35 56 84

120

165

220

$$Ben = \sum_{i=1}^{x}$$

$$Ten = \sum_{i=1}^{x} \left(\sum_{j=1}^{i} \right)$$

ten(5)

= Ben(1) + Ben(2) + Ben(3) + Ben(4)

= 1 + 3 + 6 + 10

= 20

ten(10) = 220