Class 06

Sunday, October 10, 2021 9:26 PM

s → abcdeff

T → accdfef

prefixHash(S) → 1, 12, 123, 1234, 12345, 123456, 1234566

prefixHash(T) → 1, 13, 133, 1334, 13346, 133465, 1334656

13346×10^2

$1334656 - 1334600 = 56$

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zxcab → string is nth but a 29-base number

$(z \times 29^0 + x \times 29^1 + c \times 29^2 + a \times 29^3 + b \times 29^4) \% M$

$a^b \% M$

$\phi(M) = 8$

(1), (2), (4), (8)

Modulo cycle length of $a^b \% M$ will always be a divisor of $\phi(M)$.

$P_1 - 1 = P_2^2$ ← odd

$\Rightarrow (2n) = P_2^2$

Hence, P_2^2 is an even number

$10^9 + 6 \rightarrow$ 4 Br

$a^n \% M$

$n \% \phi(M)$

$a \% M$

$n < 10^{10^5}$

$M = 10^9 + 7$

$a < 10^5$

1

Longest Common Substring

LCS → [2, 6]

N → S_1 ZAXACB

M → S_2 PCAAXA

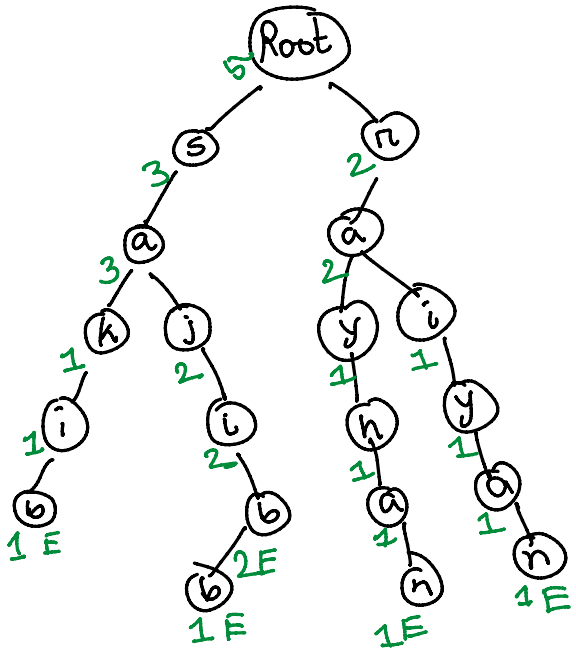
LCS → [2, 3]

$(N+M) \log M$

[3, 3]

Prefix tree ~ Trie

① sakib
② sajib
③ rayhan
④ raiyan
⑤ sajibb



Game Theory + Trie + DP

pA pB

K=2 is prefix of any

str = [a][b][ ]

ab
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1 ≤ n ≤ 10^5

$1 \leq n \leq 10^5$

$1 \leq k \leq 10^9$

$1 \leq \sum \text{characters} \leq 10^5$