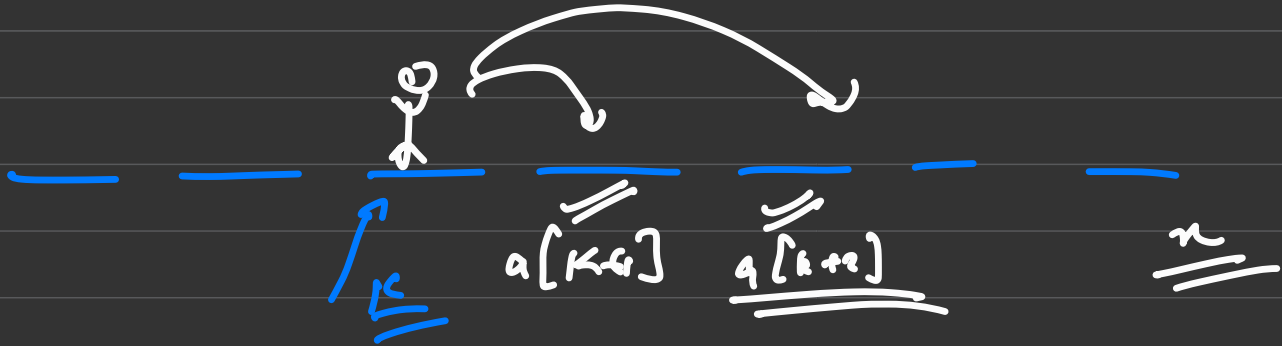


forward Phase

←
brackets
at k



$$f(i) = \max(f(i-1), f(i-2)) + \underline{\underline{a[i]}}$$

↓
denotes max

score starts from
1st index and
ending at i

Backward phase

— — — — —

$$f(i) = \max(f(i-1), f(i-2)) + a[i]$$

— — — — — — — —



$$f(x)$$

sum of digits of

all numbers $[0, x]$

ans $f(0) - f(a-1)$

$f(8655)$ \rightarrow

$\boxed{0 \text{ ——— } 8655} \rightarrow \underline{\underline{\Sigma \text{ digits}}}$

0000

0001

0002

⋮

⋮

⋮

⋮

⋮

0100

0101

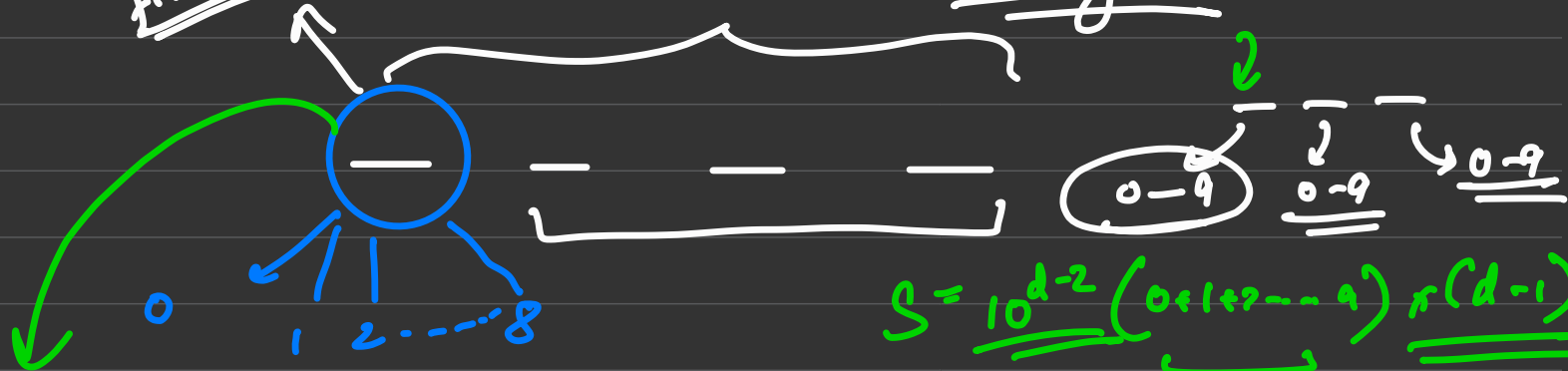
⋮

⋮

⋮

5598

8655 d digits



$$S = \underline{10^{d-2} (0+1+2+\dots+9) \times (d-1)}$$

[0, 7]

$i \times 10^{d-1}$

$$0 \times 10^3 + S + 1 \times 10^3 + S + \frac{4S}{2 \times 10^3} + S + \dots + 7 \times 10^3 + S$$

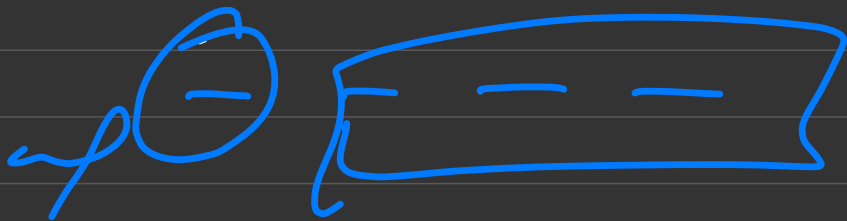
what abt 8?? 8×10^3

8000 → 8655

$$\underline{\underline{f(x)}} = \sum_{i=1}^{d-1} (i x 10^{d-i} + s) + dx(1 + x 10^{d-1})$$

$$x = \underbrace{a_1 a_2 a_3 \dots a_d}_{\underline{\underline{d \text{ digits}}}}$$

$$+ f(x 10^{d-1})$$



$$\begin{array}{ccc} \text{---} & \text{---} & \text{---} \\ \text{0/9} & \text{9/9} & \text{9-9} \\ \hline \hline & . & \hline \hline \end{array}$$

$$\underline{\underline{10^{d-2}(49)(d-1)}}$$

006
001
002
⋮
099

$$0 \times 10^2 + 1 \times 10^2 + \dots + 9 \times 10^2$$

$$10^2(0+1+2+\dots+9)$$

$$\underline{\underline{10^2(49)}}$$

$$\begin{array}{rcl}
 0 & 1 & 0 \\
 1 & 1 & 0 \\
 2 & 1 & 0 \\
 & \vdots & \\
 & \vdots & \\
 q & 1 & 0
 \end{array}
 -
 \begin{array}{rcl}
 0 & 1 & 9 \\
 1 & 1 & 9 \\
 2 & 1 & 9 \\
 & \vdots & \\
 & \vdots & \\
 q & 1 & 9
 \end{array}$$

$$\underbrace{10 \times 10}_{\text{circled}} \times 1 +$$

$$10 \times 10 \times 2 +$$

$$10 \times 10 \times 3 -$$

$$\underline{\underline{10^2 \pi(45)}}$$

R	D	1	0	0	1	0
1	D	1	1	0	0	0
0	R	R	D	1	0	1
1	0	1	R	D	0	0
1	0	1	1	D	1	0
1	0	0	0	D	1	0
1	1	1	1	R	R	0

1 → blocked
0 → open

Rat in A
maze

1

U → R → D → 2

$1 + 1 + n - 2 + n - 2$

$4n - 4$

1 1

2x2

$$\begin{array}{c}
 3^{n^2} \leftarrow 4^{n^2} \\
 \left(\begin{array}{cc}
 4n-4 & n^2-4n+4 \\
 2 & \times 3
 \end{array} \right)
 \end{array}$$