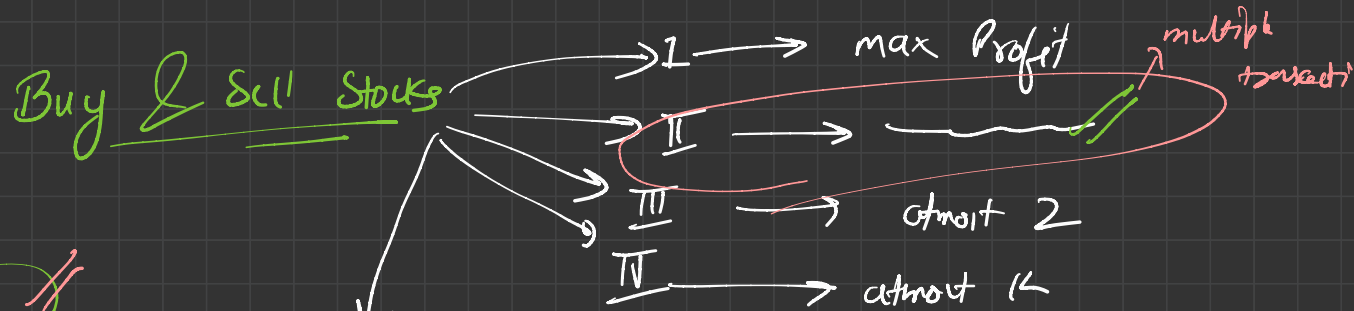
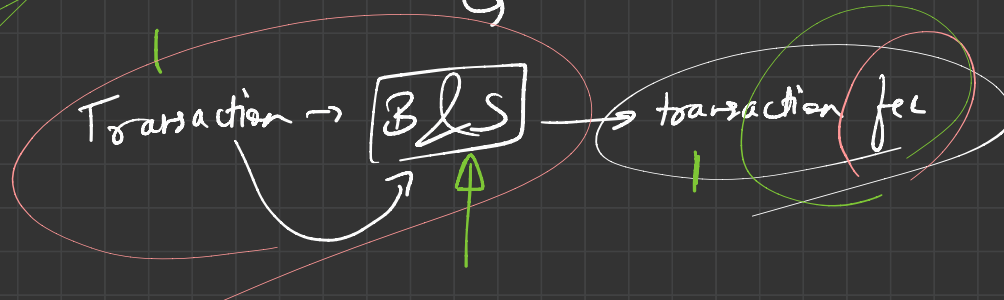



Dynamic Programming



multiple transaction



prices $\rightarrow [1, 3, 2, 8, 4, 9]$ fee = 2
 (B) (S) (B) (S)

Transaction 1 \rightarrow profit $\rightarrow 8 - 1 = 7 - \text{fee}$
 $\rightarrow 7 - 2 = 5$

Transaction 2 \rightarrow profit $= 9 - 4 = 5 - \text{fee}$
 $= 5 - 2 = 3$

Total profit $= 5 + 3 = 8$

Logic:-

$f(\text{index}, \text{buy})$

buy $\rightarrow 0 \rightarrow \text{NA}$
 $\rightarrow 1 \rightarrow \text{A}$

if (buy)

$$\text{profit} = \max \left[\begin{array}{l} \text{Buy Karo} \rightarrow (-\text{price}[i] + f(\text{index} + 1, 0)) \\ \text{Skip Karo} \rightarrow (0 + f(\text{index} + 1, 1)) \end{array} \right]$$

else

$$\text{profit} = \max \left[\begin{array}{l} \text{sell Karo} \rightarrow (+\text{price}[i] + f(\text{index} + 1, 1)) \\ \text{Skip Karo} \rightarrow (0 + f(\text{index} + 1, 0)) \end{array} \right]$$

(-fee)

