Matrix Chain Multiplication

Recurrence Relation
$$C(i,j) = \min_{i \leq k \leq j} \begin{cases} C(i,jk) + C(k+1,j) + (ABC)D \\ Pi-1PkPj \\ i \leq k \leq j \end{cases}$$

$$R(BC) = (AB)C$$

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$$3 \times 2 \times 3 = 18$$
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 $(BC)D$
 $18+6=24$
 $3 \times 1 \times 2 = 6$

$$1 \times 3 \times 3 = 9$$
 $- \mathcal{H}(BC)D) = 24 + 9 = 33$

$$C(3,4) = \begin{cases} c(3,3) + c(4,4) + \\ P_2 P_3 P_4 \\ 1 + 2 + 3 \end{cases}$$

$$\frac{2 \times 3}{3 + 1} \qquad \frac{4 \text{ Matrix}}{3 + 1} \Rightarrow \frac{5 \text{ Possibilities}}{1 \text{ Interview}} \Rightarrow \frac{DSA}{1 \text{ Interview}}$$

$$\frac{6 \text{ C3}}{4} \qquad \frac{10 \text{ Matrix}}{4} \Rightarrow \frac{10 \text{ Matrix}}{2 \text{ mumber of}} \Rightarrow \frac{2 \text{ mumber}}{2 \text{ mumber of}}$$

$$\frac{6!}{3! 3! 4} = \frac{16 \times S \times M}{3 \times M \times M} \Rightarrow \frac{2 \times S \times M}{2 \times M \times M}$$

$$\frac{6!}{3! 3! 4} = \frac{18 \times S \times M}{3 \times M \times M} \Rightarrow \frac{18 \times S}{2 \times M}$$

$$\frac{2 \times 9}{2 \times 4} = \frac{18 \times S}{2 \times M}$$

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$$\frac{2}{3}$$

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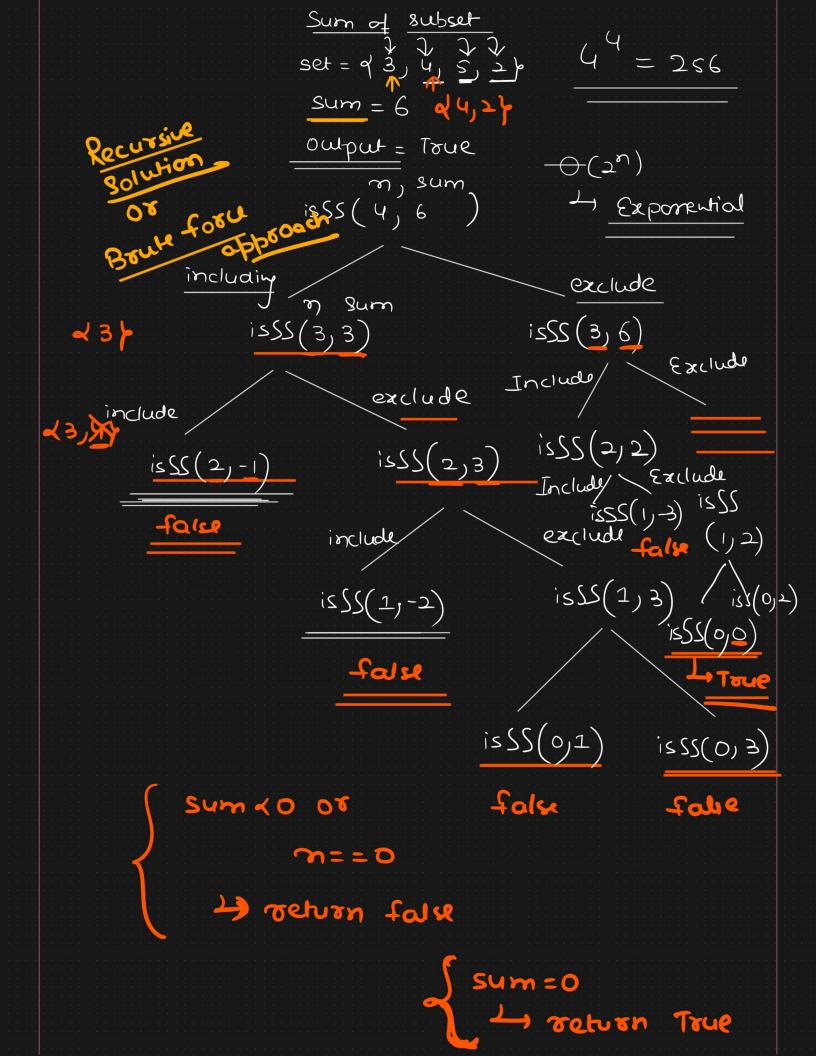
$$\frac{2}{3}$$

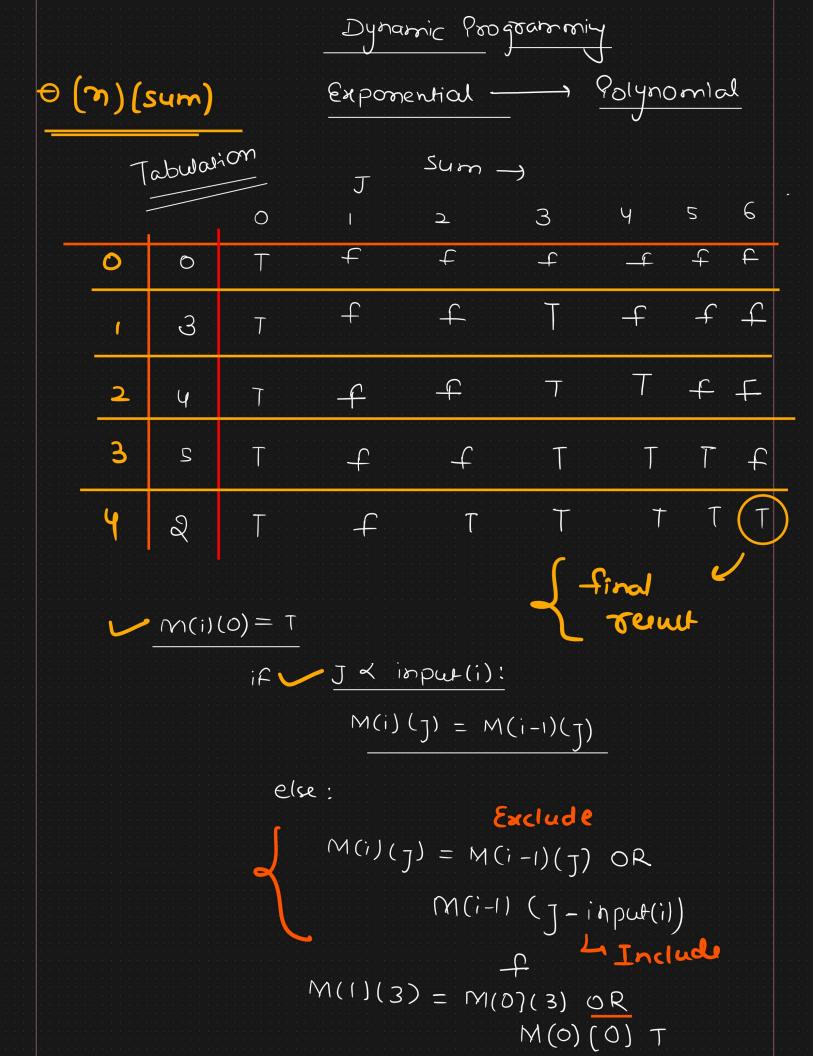
$$\frac{2}{3}$$

$$\frac{2}{3}$$

$$\frac{2}{4}$$

$$\frac{2}$$





$$M(1)(6) = \frac{M(0)(6)}{M(0)(3)}$$