

# Data Science & AI



Artificial Intelligence

**Adversarial**

**One Shot**



**By- Sudhanshu Sir**

# Recap of Previous Lecture



Topic

Topic

Topic

Topic

Topic

# Topics to be Covered



Topic

Advarsarial Search

Topic

Minmax

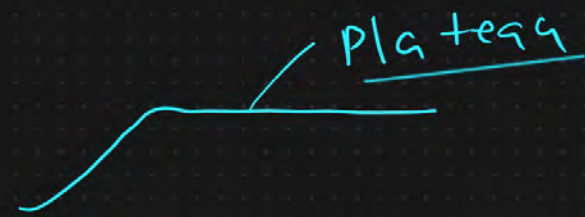
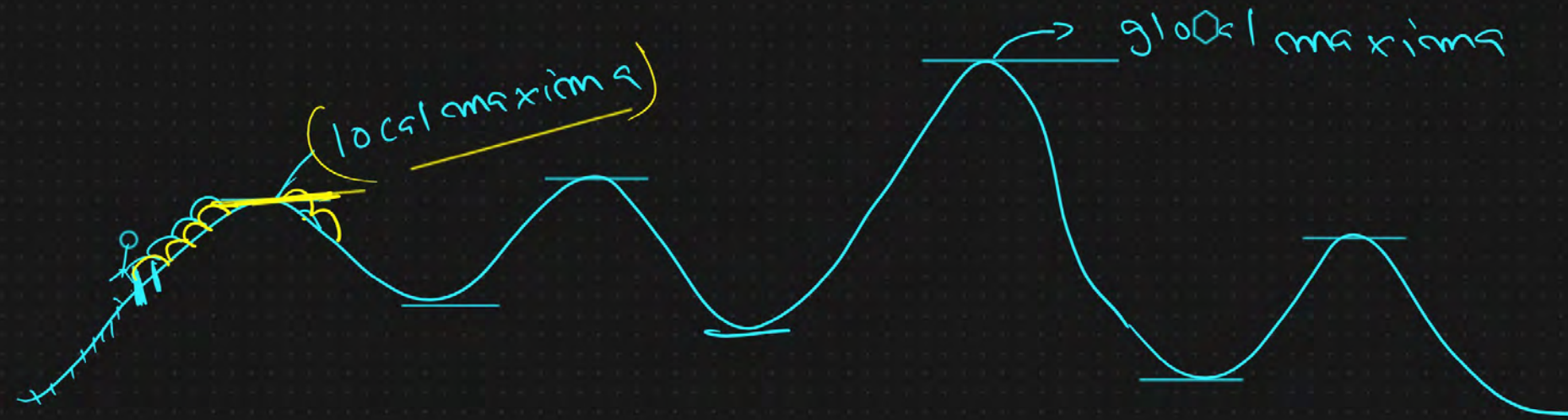
Topic

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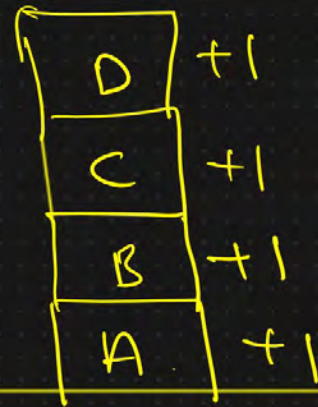
# Hill climbing algorithm



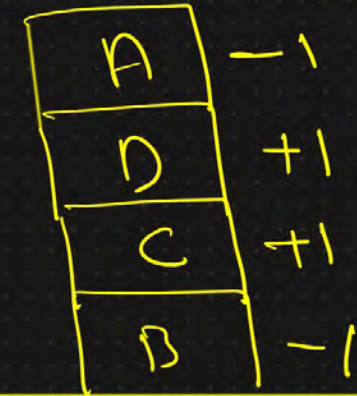
Single state →



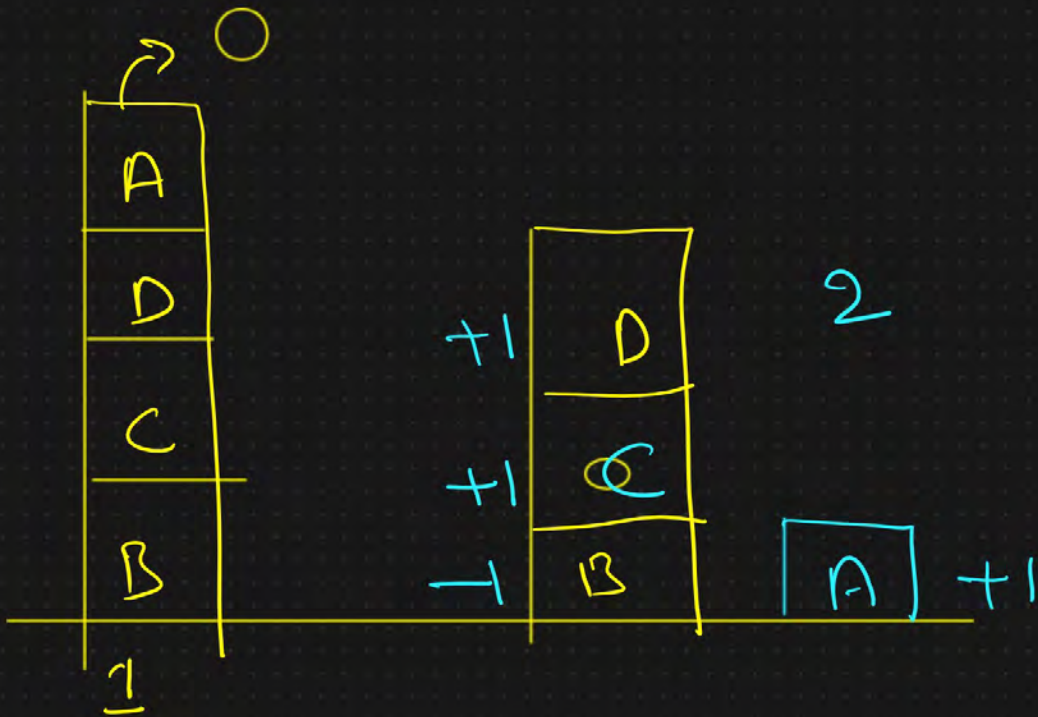
End ✓ +4 ✓



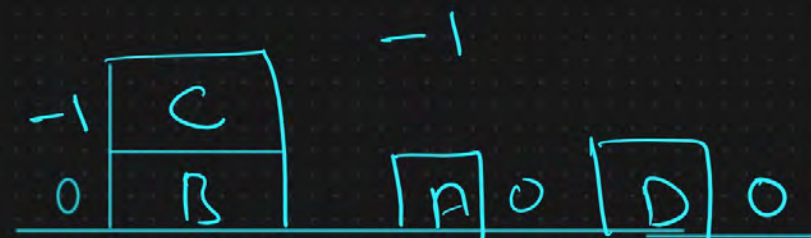
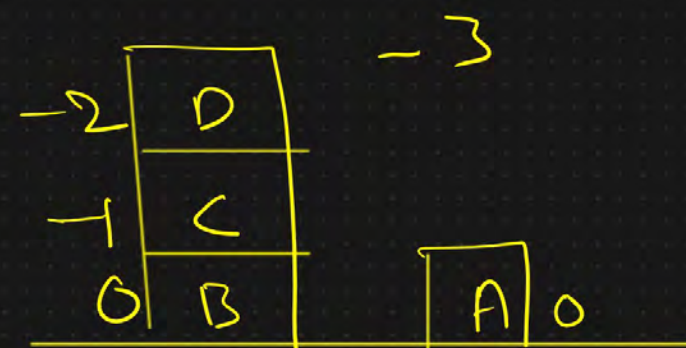
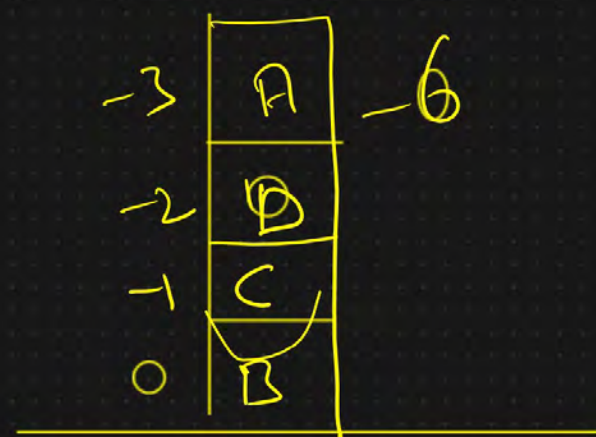
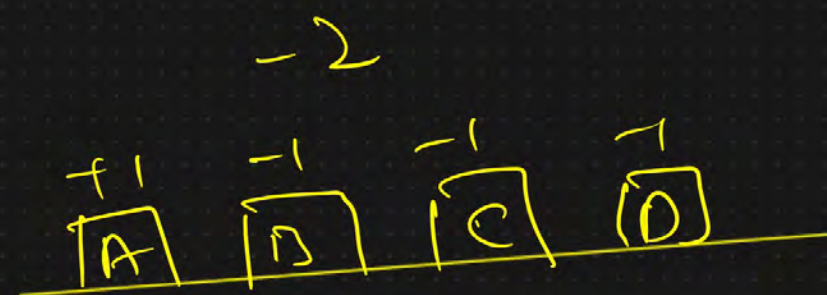
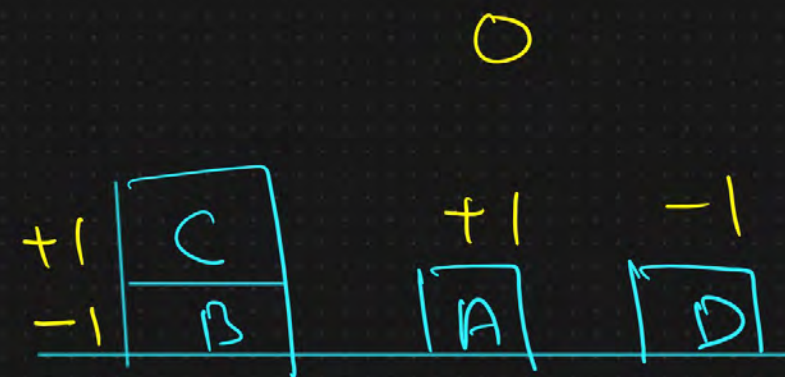
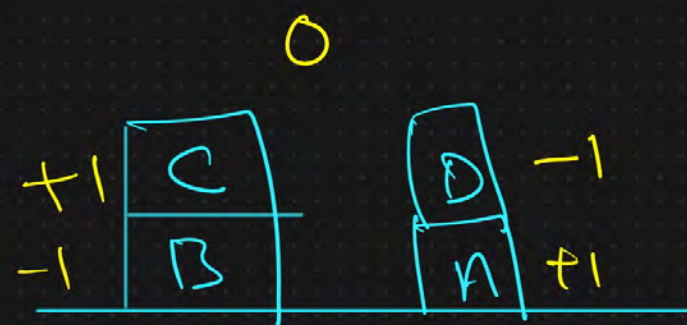
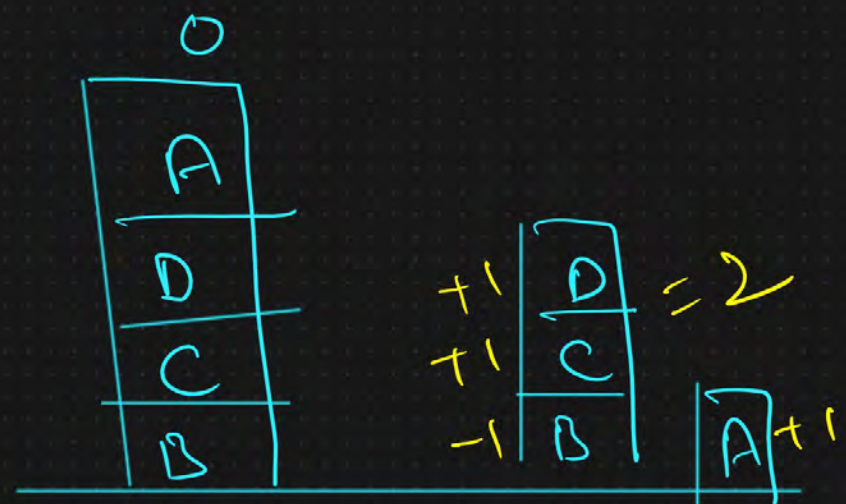
Start = 0



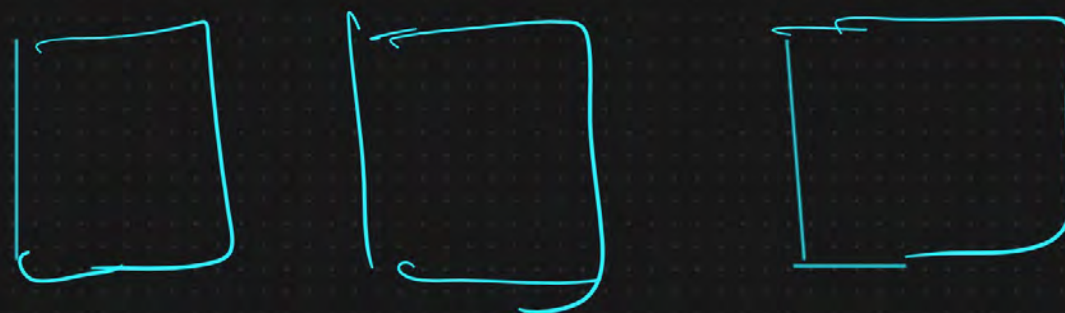
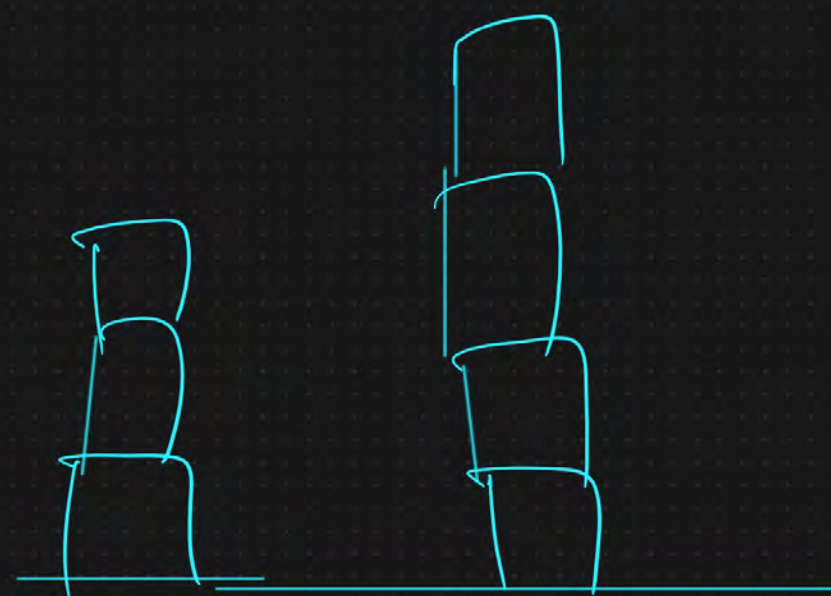
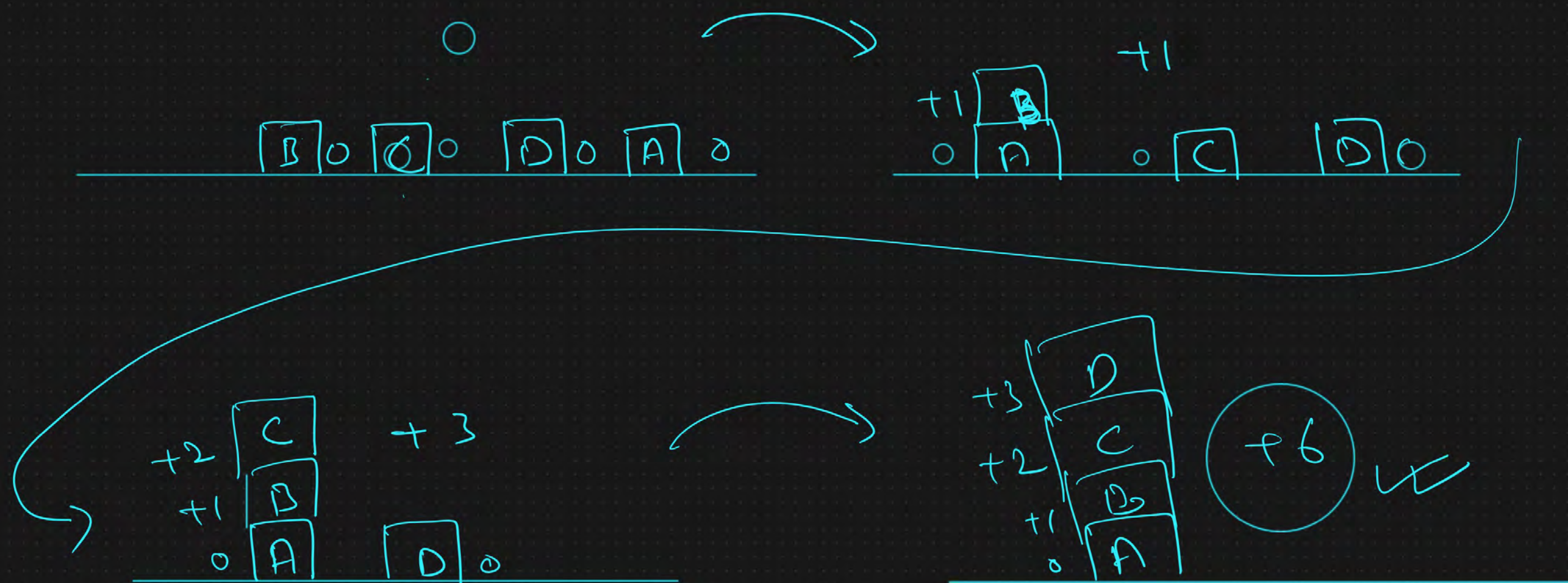
+1 → if blocks are nesting on correct block  
-1 → if blocks are nesting on wrong blocks.





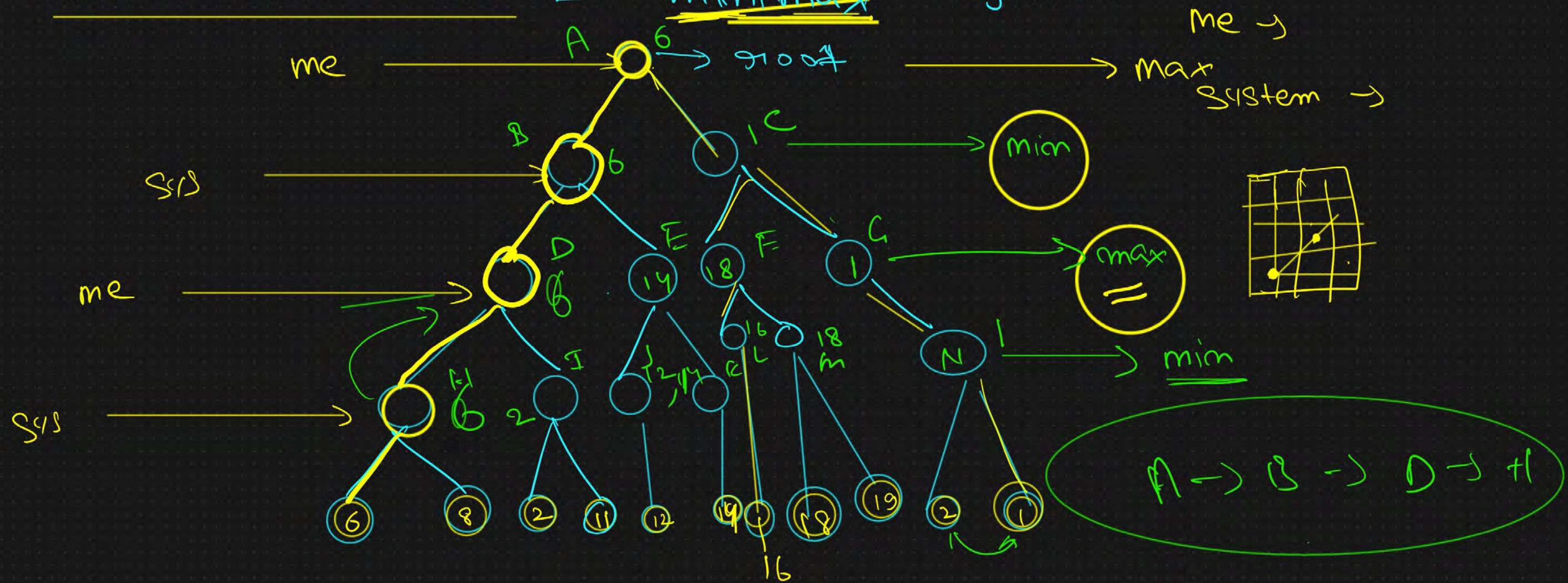








Adversarial Search  $\Rightarrow$  minimax Algorithm





$\wedge, \vee, \sim, \neg, \in, \forall, \dots$

① Propositional logic  $\rightarrow$   $\textcircled{T}, F, 0, 1 \rightarrow (2+2=8) \Rightarrow \textcircled{F}$  ✓  
 (Note:  $\textcircled{T}$  is labeled "tautology" and  $\textcircled{F}$  is labeled "contradiction")

② Predicate logic  $\rightarrow$

① Things that are true called as tautology

② Things that are False called as contradiction

① Atomic Proposition  $\rightarrow$  we are preparing for Gate / we are student of PW.  
 Aditya is preparing for Gate Exam 2029  $\rightarrow T$

② Compound Proposition  $\rightarrow$  Aditya is PW student and he is preparing for Gate

$\textcircled{S1}$  T F T F

$\textcircled{S2}$  T F F T

$\vee$

$S1 \wedge S2 \Rightarrow \textcircled{T}$  ✓

AND

	T	F	T
T	T	F	F
F	F	T	F
F	F	F	F



## Connectors in Proposition :-

- ① AND  $\Rightarrow \underline{\wedge}, \wedge \rightarrow$  Conjunction  $\rightarrow$  Aditya is student of PU and He is preparing for gate  
 $S_1 \quad S_2 \quad (S_1 \wedge S_2) \rightarrow$
- ② OR  $\Rightarrow \underline{\vee}, \vee \rightarrow$  Disjunction  $\Rightarrow$  After Next year you will be in college or Company.  
 $S_1 \quad S_2 \quad S_1 \vee S_2$
- ③ ~,  $\neg \Rightarrow$  Not.  $\rightarrow$  Negation  $\Rightarrow$  Aditya is not preparing for exam.  $\rightarrow S_1 (\neg S_1)$
- ④  $\rightarrow \Rightarrow$  implication  $\rightarrow$  if you will study hard then only you can crack Gate.  
 $S_1 \quad S_2 \quad (S_1 \rightarrow S_2) \rightarrow$
- ⑤  $\Leftrightarrow \Rightarrow$  Biconditional.  
if Aditya will crack gate then He will get a good package  
 $S_1 \quad S_2 \quad (S_1 \Leftrightarrow S_2)$





## 2 mins Summary



Topic

Adversarial Search

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# THANK - YOU