

Name: Sudesh Pawar

PRN: FI7111037

Class: BE Comp A

i) What is goal stack planning?

Ans. Goal Stack planning is one of the most basic and earliest planning techniques.

Here is what the stack contains:

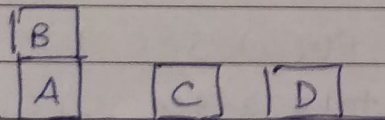
i) Goals,

ii) Operators - ADD, DELETE and PREREQUISITE List.

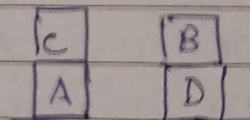
iii) A database that maintains current situation for each operator.

Q.2] Give one example using goal stack planning. Give preconditioning, add & delete specifications for each action.

Ans.



Initial state



Goal state

Initial state: $ON(B,A) \wedge ONT(C) \wedge ONT(A) \wedge$
 $ONT(D) \wedge CL(B) \wedge CL(C) \wedge CL(D)$
 $\wedge AE$

Goal State: $ON(C,A) \wedge ON(B,D) \wedge ONT(A) \wedge$
 $ONT(D) \wedge CL(C) \wedge CL(B) \wedge AE$

Goal Stack:

 $ON(C,A)$ $ON(B,D)$

$ON(C,A) \wedge ON(B,D) \wedge ONT(A) \wedge ONT(D) \wedge CL(C)$
 $\wedge CL(B) \wedge AE$

To execute $S(C, A)$ all the preconditions should be true. Here $HOLD(C)$ is not true, to make the state true, use operator $PU(C)$ and write preconditions

GOAL Stack:

$ONT(C) \wedge CL(C) \wedge AE$

$PU(C)$

$HOLD(C)$

$SC(C, A)$

$ON(B, D)$

$ON(C, A) \wedge ON(B, D) \wedge ONT(A) \wedge ONT(D) \wedge$
 $CL(C) \wedge CL(B) \wedge AE$

SQUEUE: $US(B, A), S(B, D), PU(C), S(C, +)$

Finally we reached goal state after $S(C, A)$.
So the plan for given problem is,

Unstack (B, A)

Stack (B, D)

PickUp (C)

Stack (C, A)