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FSSP( $S_0, G$ )
1  $S \leftarrow S_0$ 
2  $\pi \leftarrow \text{empty plan}$ 
3 loop
4   if  $G \subseteq S$ 
5     return  $\pi$ 
6   actions  $\leftarrow$  set of applicable actions in  $S$ 
7   if actions is empty
8     return failure
9   choose  $a \in$  actions  $\triangleright$  choose an action
10   $S \leftarrow \gamma(S, a)$   $\triangleright$  progress to new state
11   $\pi \leftarrow \pi \circ a$   $\triangleright$  update plan

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BSSP( $S_0, G$ )
1  $G' \leftarrow G$ 
2  $\pi \leftarrow \text{empty plan}$ 
3 loop
4   if  $G' \subseteq S_0$ 
5     if  $G \subseteq \gamma(S_0, \pi)$  then return  $\pi$ 
6     else return failure
7   actions  $\leftarrow$  set of relevant actions for  $G'$ 
8   if actions is empty
9     return failure
10  choose  $a \in$  actions  $\triangleright$  choose an action
11   $G' \leftarrow \gamma^{-1}(G', a)$   $\triangleright$  regress to new goal
12   $\pi \leftarrow a \circ \pi$   $\triangleright$  update plan

```

Steps for generating plan @ 11  
info for movegen: available  
NO search strategy  
Node - State of the world  
movegen @ 6  
non-det selection @ 9  
In full impltn:  
-- non-det selection handled by:  
----choose 1/1 while backtracking  
-----on failure

Steps for generating plan @ 12  
info for movegen: available  
NO search strategy  
Node - Goal/subgoal  
movegen @ 7  
non-det selection @ 10  
In full impltn:  
-- non-det selection handled by:  
----choose 1/1 while backtracking  
-----on failure

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GSP(givenState, givenGoal, actions) PUSHSET( $G, \text{stack}$ )
1  $\pi \leftarrow \text{empty plan}$ 
2 stack  $\leftarrow$  empty stack
3  $S \leftarrow \text{givenState}$ 
4 PUSHSET(givenGoal, stack)
5 while stack is not empty
6    $X \leftarrow \text{pop stack}$ 
7   if  $X$  is an action  $a$ 
8      $\pi \leftarrow \pi \circ a$ 
9      $S \leftarrow \text{PROGRESS}(S, a)$ 
10  else if  $X$  is a compound goal  $G$ , and  $G$  is not true in  $S$ 
11    PUSHSET( $G, \text{stack}$ )
12  else if  $X$  is a goal  $g$ , and  $g$  is not true in  $S$ 
13     $a \leftarrow \text{choose a relevant action that achieves } g$ 
14    if  $a$  is null then return failure
15    push  $a$  to stack
16    PUSHSET( $\text{pre}(a), \text{stack}$ )

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Steps for generating plan @ 8  
info for movegen: available  
Yes search strategy: Stack  
Node - Goal/subgoal  
movegen @ 13  
non-det selection @ 13  
In full impltn:  
-- non-det selection handled by:  
----choose 1/1 while backtracking  
-----on failure

```

PSP( $\pi$ )
1 flaws  $\leftarrow \text{OPENGOALS}(\pi) \cup \text{THREATS}(\pi)$ 
2 if flaws is empty
3   return  $\pi$   $\triangleright$  a plan with no flaws
4 choose  $\phi \in$  flaws  $\triangleright$  choose a flaw
5 resolvers  $\leftarrow \text{RESOLVE}(\phi, \pi)$ 
6 if resolvers is empty
7   return failure  $\triangleright$  a flaw with no resolvers
8 choose  $\rho \in$  resolvers  $\triangleright$  choose a resolver
9  $\pi' \leftarrow \text{REFINE}(\rho, \pi)$ 
10 return PSP( $\pi'$ )

```

Steps for generating plan @ 9  
info for movegen: available  
No search strategy  
Node - Partial plan  
movegen @ 1,4,5  
non-det selection @ 4,8  
In full impltn:  
-- non-det selection handled by:  
----choose 1/1 while backtracking  
-----on failure