

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  $a \in \text{actions}$ 
10    $S \leftarrow \gamma(S, a)$ 
11    $\pi \leftarrow \pi \circ a$ 

```

$\text{pre}(a) \subseteq S$

Has plan generation step @ 11
 MoveGen NOT specified
 Search Strategy NOT specified
 Node -- State of the World
 MoveGeneration @ 6
 Non-Det selection @ 9
 -- handled by in full impltn:
 selecting each choice 1/1 while
 backtracking on failure

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  $a \in \text{actions}$ 
11    $G' \leftarrow \gamma^{-1}(G', a)$ 
12    $\pi \leftarrow a \circ \pi$ 

```

$e^+ n g \neq \phi$
 and
 $e^- n g = \phi$

Has plan generation step @ 12
 MoveGen NOT specified
 Search Strategy NOT specified
 Node -- Goal/Subgoal
 MoveGeneration @ 7
 Non-Det selection @ 10
 -- handled by in full impltn:
 selecting each choice 1/1 while
 backtracking on failure

GSP(givenState, givenGoal, actions)

```

1   $\pi \leftarrow \text{empty plan}$ 
2  stack  $\leftarrow \text{empty stack}$ 
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( $G$ , 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( $\text{pre}(a)$ , stack)
17  return  $\pi$ 

```

PUSHSET(G , stack)
 1 push G to stack
 2 for each goal g in G
 3 push g to stack
 4 return

PROGRESS(S , a)
 1 return $\{S \cup \text{add-effects}(a)\} \setminus \text{del-effects}(a)$

Has plan generation step @ 8
 MoveGen NOT specified
 Search Strategy IS(?) specified
 Node -- (?)
 MoveGeneration @ 13
 Non-Det selection @ 13
 -- handled by in full impltn:
 selecting each choice 1/1 while
 backtracking on failure

PSP(π)

```

1  flaws  $\leftarrow \text{OPENGOALS}(\pi) \cup \text{THREATS}(\pi)$ 
2  if flaws is empty
3    return  $\pi$ 
4  choose  $\phi \in \text{flaws}$ 
5  resolvers  $\leftarrow \text{RESOLVE}(\phi, \pi)$ 
6  if resolvers is empty
7    return failure
8  choose  $\rho \in \text{resolvers}$ 
9   $\pi' \leftarrow \text{REFINE}(\rho, \pi)$ 
10  return PSP( $\pi'$ )

```

\triangleright a plan with no flaws
 \triangleright choose a flaw
 \triangleright choose a resolver
 \triangleright a flaw with no resolvers
 \triangleright choose a resolver

Has plan generation step @ yes but where
 MoveGen NOT specified
 Search Strategy NOT specified
 Node -- Partial Plan
 MoveGeneration @ 1,4,5
 Non-Det selection @ 4,8
 -- handled by in full impltn:
 selecting each choice 1/1 while
 backtracking on failure