JUNGLE LOGIC ADVENTURE

Reference: MAHI KUMARI | ROLL NO: 21 | REG NO: 12316437

Problem Statement

A clever monkey spots juicy bananas hanging from the ceiling—just out of reach. In the room lies table, the key to reaching the prize. The monkey can walk, move the box, climb it, and grab the bananas.

The goal is to design an AI that thinks ahead, plans smart moves, and solves the puzzle to help the monkey claim his golden snack.

Rules & Constraints:

Rules:

•The monkey can walk, move the table, climb the table, and grab the bananas.

•Bananas are out of reach without using the table.

•The table must be positioned directly under the bananas for the monkey to climb and grab them.

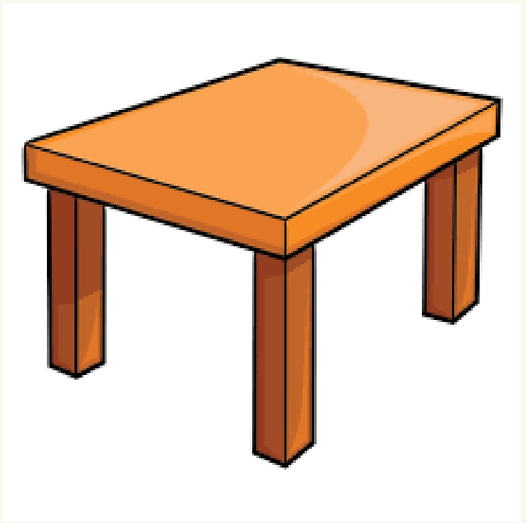
Constraints:

•The monkey can’t jump to reach the bananas without the table.

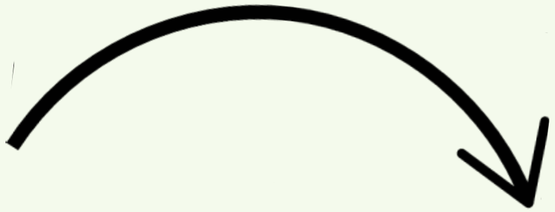
•The box can only be moved along the floor and within room boundaries.

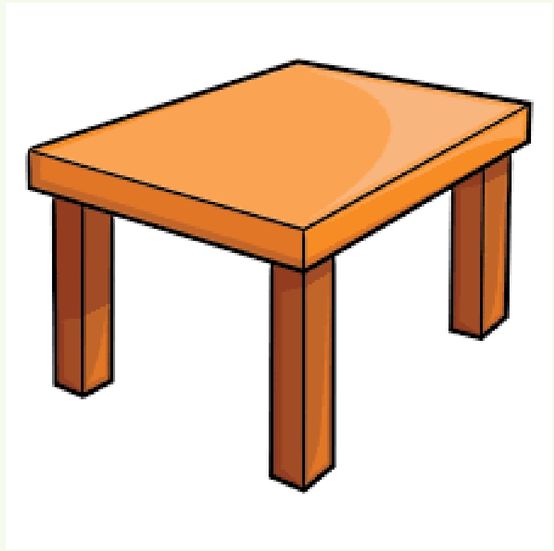
•Grabbing bananas is only possible when the monkey is on the table, directly beneath them.

Animation:

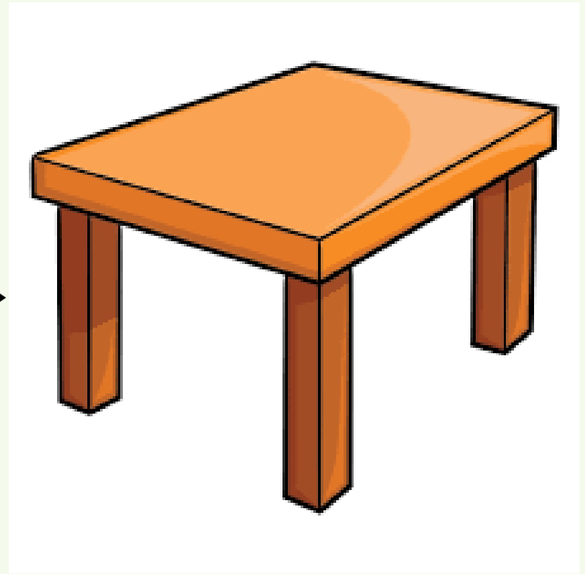


Step 1:



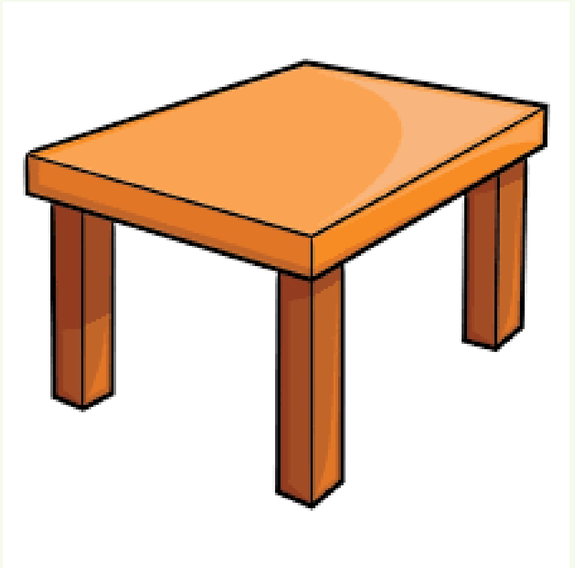


Step 2:



Step 3:

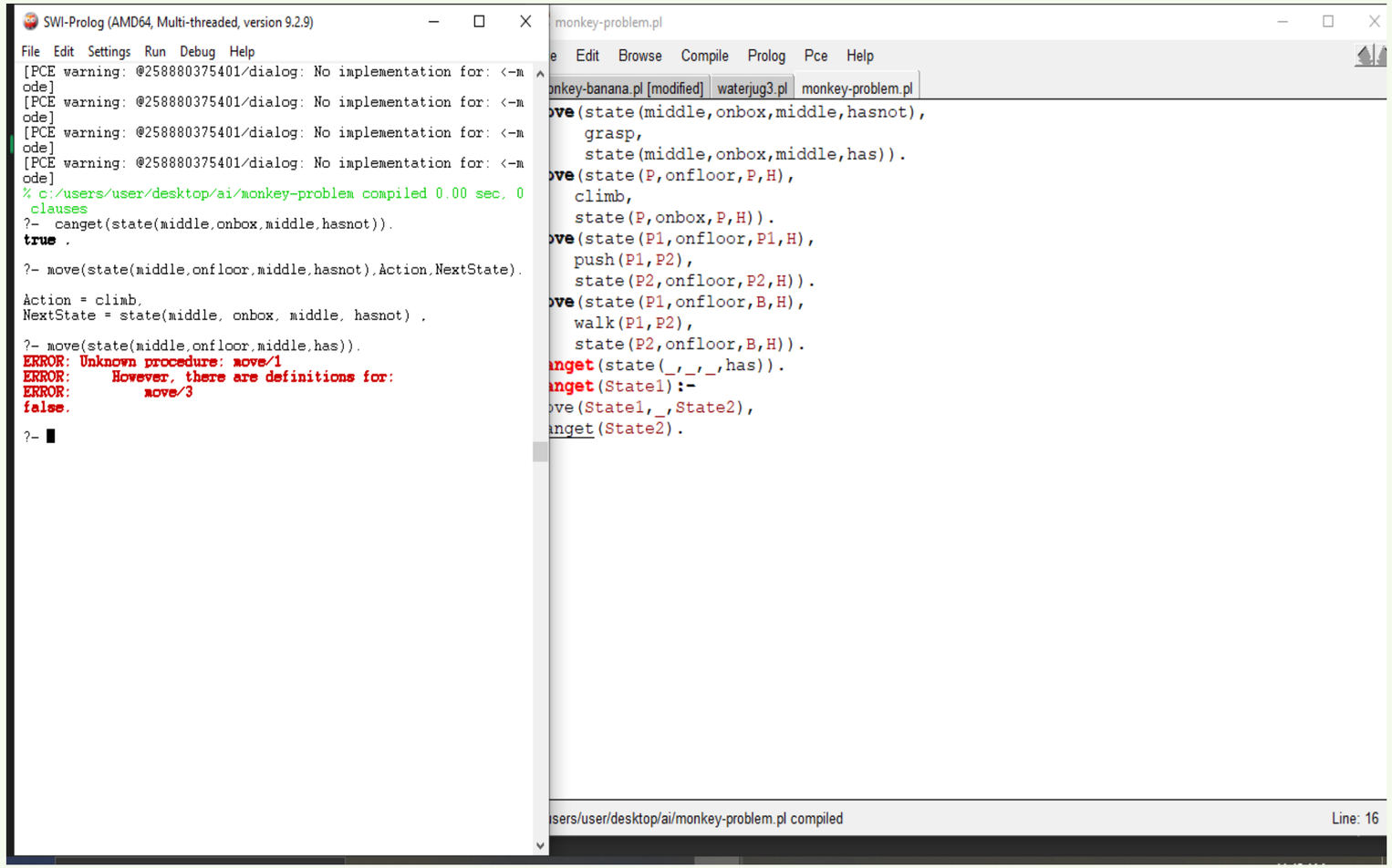
Step 4:



CODE:

```
move(state(middle, onbox,middle,hasnot),
      grasp,
      state(middle,onbox,middle,has)).
move(state(P,onfloor,P,H),
    climb,
    state( P, onbox,P,H)).
move(state(P1,onfloor,P1,H),
    push(P1,P2),
    state(P2,onfloor,P2,H)).
move(state(P1,onfloor,B,H),
    walk(P1,P2),
    state(P2,onfloor,B,H)).
canget(state(_,_,_,has)).
canget(State1):-
move(State1,_,State2),
canget(State2).
```

Output


SWI-Prolog (AMD64, Multi-threaded, version 9.2.9)
File Edit Settings Run Debug Help
[PCE warning: @258880375401/dialog: No implementation for: <-m
ode]
[PCE warning: @258880375401/dialog: No implementation for: <-m
ode]
[PCE warning: @258880375401/dialog: No implementation for: <-m
ode]
[PCE warning: @258880375401/dialog: No implementation for: <-m
ode]
% c:/users/user/desktop/ai/monkey-problem compiled 0.00 sec, 0
clauses
?- canget(state(middle,onbox,middle,hasnot)).
true .
?- move(state(middle,onfloor,middle,hasnot),Action,NextState).
Action = climb,
NextState = state(middle, onbox, middle, hasnot) ,
?- move(state(middle,onfloor,middle,has)).
ERROR: Unknown procedure: move/1
ERROR: However, there are definitions for:
ERROR: move/3
false.
?-
monkey-problem.pl
e Edit Browse Compile Prolog Pce Help
nkey-banana.pl [modified] waterjug3.pl monkey-problem.pl
ove(state(middle,onbox,middle,hasnot),
grasp,
state(middle,onbox,middle,has)).
ove(state(P,onfloor,P,H),
climb,
state(P,onbox,P,H)).
ove(state(P1,onfloor,P1,H),
push(P1,P2),
state(P2,onfloor,P2,H)).
ove(state(P1,onfloor,B,H),
walk(P1,P2),
state(P2,onfloor,B,H)).
anget(state(_,_,_,has)).
anget(State1):-
ove(State1,_,State2),
anget(State2).
sers/user/desktop/ai/monkey-problem.pl compiled
Line: 16