**Roll No: 5117060**

**Banana Monkey Problem**

**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:**

| ?- change\_directory('C:/Users/asus/Desktop/Notes BE 2020-21/AI').

yes

| ?- [prolog]

.

compiling C:/Users/asus/Desktop/Notes BE 2020-21/AI/prolog.pl for byte code...

C:/Users/asus/Desktop/Notes BE 2020-21/AI/prolog.pl compiled, 15 lines read - 2185 bytes written, 22 ms

(16 ms) yes

| ?- canget(state(atdoor,onfloor,atwindow,hasnot)).

true ?

(16 ms) yes

| ?- trace.

The debugger will first creep -- showing everything (trace)

yes

{trace}

| ?- canget(state(atdoor,onfloor,atwindow,hasnot)).

1 1 Call: canget(state(atdoor,onfloor,atwindow,hasnot)) ?

2 2 Call: move(state(atdoor,onfloor,atwindow,hasnot),\_52,\_92) ?

2 2 Exit: move(state(atdoor,onfloor,atwindow,hasnot),walk(atdoor,\_80),state(\_80,onfloor,atwindow,hasnot)) ?

3 2 Call: canget(state(\_80,onfloor,atwindow,hasnot)) ?

4 3 Call: move(state(\_80,onfloor,atwindow,hasnot),\_110,\_150) ?

4 3 Exit: move(state(atwindow,onfloor,atwindow,hasnot),climb,state(atwindow,onbox,atwindow,hasnot)) ?

5 3 Call: canget(state(atwindow,onbox,atwindow,hasnot)) ?

6 4 Call: move(state(atwindow,onbox,atwindow,hasnot),\_165,\_205) ?

6 4 Fail: move(state(atwindow,onbox,atwindow,hasnot),\_165,\_193) ?

5 3 Fail: canget(state(atwindow,onbox,atwindow,hasnot)) ?

4 3 Redo: move(state(atwindow,onfloor,atwindow,hasnot),climb,state(atwindow,onbox,atwindow,hasnot)) ?

4 3 Exit: move(state(atwindow,onfloor,atwindow,hasnot),push(atwindow,\_138),state(\_138,onfloor,\_138,hasnot)) ?

5 3 Call: canget(state(\_138,onfloor,\_138,hasnot)) ?

6 4 Call: move(state(\_138,onfloor,\_138,hasnot),\_168,\_208) ?

6 4 Exit: move(state(\_138,onfloor,\_138,hasnot),climb,state(\_138,onbox,\_138,hasnot)) ?

7 4 Call: canget(state(\_138,onbox,\_138,hasnot)) ?

8 5 Call: move(state(\_138,onbox,\_138,hasnot),\_223,\_263) ?

8 5 Exit: move(state(middle,onbox,middle,hasnot),grasp,state(middle,onbox,middle,has)) ?

9 5 Call: canget(state(middle,onbox,middle,has)) ?

9 5 Exit: canget(state(middle,onbox,middle,has)) ?

7 4 Exit: canget(state(middle,onbox,middle,hasnot)) ?

5 3 Exit: canget(state(middle,onfloor,middle,hasnot)) ?

3 2 Exit: canget(state(atwindow,onfloor,atwindow,hasnot)) ?

1 1 Exit: canget(state(atdoor,onfloor,atwindow,hasnot)) ?

true ?