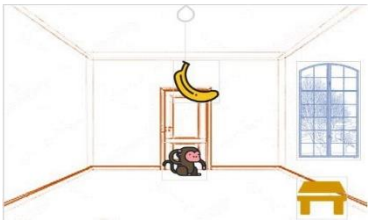
TASK:7

Implementation of **Monkey Banana Problem** in Goal Stack planning using python by applying following constraints.

Aim: To Implement the Monkey Banana Problem in Goal Stack planning using python



Algorithm:

Step 1: when the block is at the middle, and monkey is on top of the block and monkey does not have the banana (i.e. has not state), then using the grasp action,it will change from has not state to have state.

Step 2: from the floor, it can move to the top of the block Lie on top state & by performing the action climb.

Step3: The push or drag operation moves the block from one place to another.

Step 4: Monkey can move from one place to another using walk or move clauses.

Step 5: Another predicate will be canget ().

Program:

```
# Operators
def move(subject, x1, x2):
    return f"Move {subject} from {x1} to {x2}"

def push_box(x1, x2):
    return f"Push box from {x1} to {x2}"

def climb_box(x, direction):
    return f"Climb box at {x} {direction}"

def have_banana(x):
    return f"Have banana at {x}"

# Initial State
```

```
initial_state = {
    'monkeyAt0': True,
    'monkeyLevel': 'Down',
    'bananaAt1': True,
    'boxAt2': True
}

# Goal State
goal_state = {
    'GetBanana': True,
    'at': 1
}

# Planning Algorithm
def plan_actions(initial_state, goal_state):
    actions = []

    # Example planning algorithm to achieve the goal state
    if initial_state['monkeyAt0'] and initial_state['bananaAt1']:
        actions.append(move('Monkey', 0, 1))
        actions.append(climb_box(1, 'Up'))
        actions.append(have_banana(1))

    return actions

# Execute the planning algorithm
actions = plan_actions(initial_state, goal_state)

# Print the actions in the plan
print("Plan:")
for action in actions:
    print(action)
```

Output:

Plan:

Move Monkey from 0 to 1

Climb box at 1 Up

Have banana at 1

Result:

Thus the Implementation the Monkey Banana Problem in Goal Stack planning using python was successfully executed and output was verified.