**Implement a vacuum cleaner agent.**

def

vacuum\_world():

# initializing goal\_state

# 0 indicates Clean and 1 indicates Dirty

goal\_state = {'A': '0', 'B': '0'}

cost = 0

location\_input = input("Enter Location of Vacuum") #user\_input of

location vacuum is placed

status\_input = input("Enter status of " + location\_input) #user\_input if

location is dirty or clean

status\_input\_complement = input("Enter status of other room")

print("Initial Location Condition" + str(goal\_state))

if location\_input == 'A':

# Location A is Dirty.

print("Vacuum is placed in Location A")

if status\_input == '1':

print("Location A is Dirty.")

# suck the dirt and mark it as clean

goal\_state['A'] = '0'

cost += 1 #cost for suck

print("Cost for CLEANING A " + str(cost))

print("Location A has been Cleaned.")

if status\_input\_complement == '1':

# if B is Dirty

print("Location B is Dirty.")

print("Moving right to the Location B. ")

cost += 1 #cost for moving right

print("COST for moving RIGHT" + str(cost))

# suck the dirt and mark it as clean

goal\_state['B'] = '0'

cost += 1 #cost for suck

print("COST for SUCK " + str(cost))

print("Location B has been Cleaned. ")

else:

print("No action" + str(cost))

# suck and mark clean

print("Location B is already clean.")

if status\_input == '0':

print("Location A is already clean ")

if status\_input\_complement == '1':# if B is Dirty

print("Location B is Dirty.")

print("Moving RIGHT to the Location B. ")

cost += 1 #cost for moving right

print("COST for moving RIGHT " + str(cost))

# suck the dirt and mark it as clean

goal\_state['B'] = '0'

cost += 1 #cost for suck

print("Cost for SUCK" + str(cost))

print("Location B has been Cleaned. ")

else:

print("No action " + str(cost))

print(cost)

# suck and mark clean

print("Location B is already clean.")

else:

print("Vacuum is placed in location B")

# Location B is Dirty.

if status\_input == '1':

print("Location B is Dirty.")

# suck the dirt and mark it as clean

goal\_state['B'] = '0'

cost += 1 # cost for suck

print("COST for CLEANING " + str(cost))

print("Location B has been Cleaned.")

if status\_input\_complement == '1':

# if A is Dirty

print("Location A is Dirty.")

print("Moving LEFT to the Location A. ")

cost += 1 # cost for moving right

print("COST for moving LEFT" + str(cost))

# suck the dirt and mark it as clean

goal\_state['A'] = '0'

cost += 1 # cost for suck

print("COST for SUCK " + str(cost))

print("Location A has been Cleaned.")

else:

print(cost)

# suck and mark clean

print("Location B is already clean.")

if status\_input\_complement == '1': # if A is Dirty

print("Location A is Dirty.")

print("Moving LEFT to the Location A. ")

cost += 1 # cost for moving right

print("COST for moving LEFT " + str(cost))

# suck the dirt and mark it as clean

goal\_state['A'] = '0'

cost += 1 # cost for suck

print("Cost for SUCK " + str(cost))

print("Location A has been Cleaned. ")

else:

print("No action " + str(cost))

# suck and mark clean

print("Location A is already clean.")

# done cleaning

print("GOAL STATE: ")

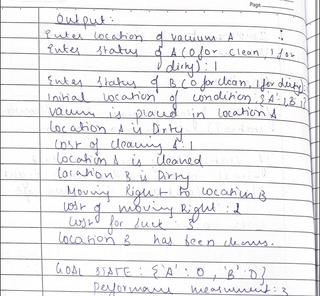
print(goal\_state)

print("Performance Measurement: " + str(cost))

Output:

vacuum\_world()

OUTPUT:



STATE SPACE AND ALGORITHM

