VACUUM CLEANER:

```python
#VACCUUM
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 for location vacuum is placed
    status_input = input("Enter status of " + location_input + " (0 for Clean, 1 for Dirty): ")  # User input if location is dirty or clean
    status_input_complement = input("Enter status of other room (0 for Clean, 1 for Dirty): ")

    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 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 needed; Location B is already clean.")
        else:
            print("Location A is already clean.")
            if status_input_complement == '1':  # If B is Dirty
                print("Location B is Dirty.")
                print("Moving RIGHT to 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 needed; Location B is already clean.")

    else:  # Vacuum is placed in location B
        print("Vacuum is placed in Location B")
        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 B: " + 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 Location A.")
                cost += 1  # Cost for moving left
                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 needed; Location A is already clean.")
        else:
            print("Location B is already clean.")
            if status_input_complement == '1':  # If A is Dirty
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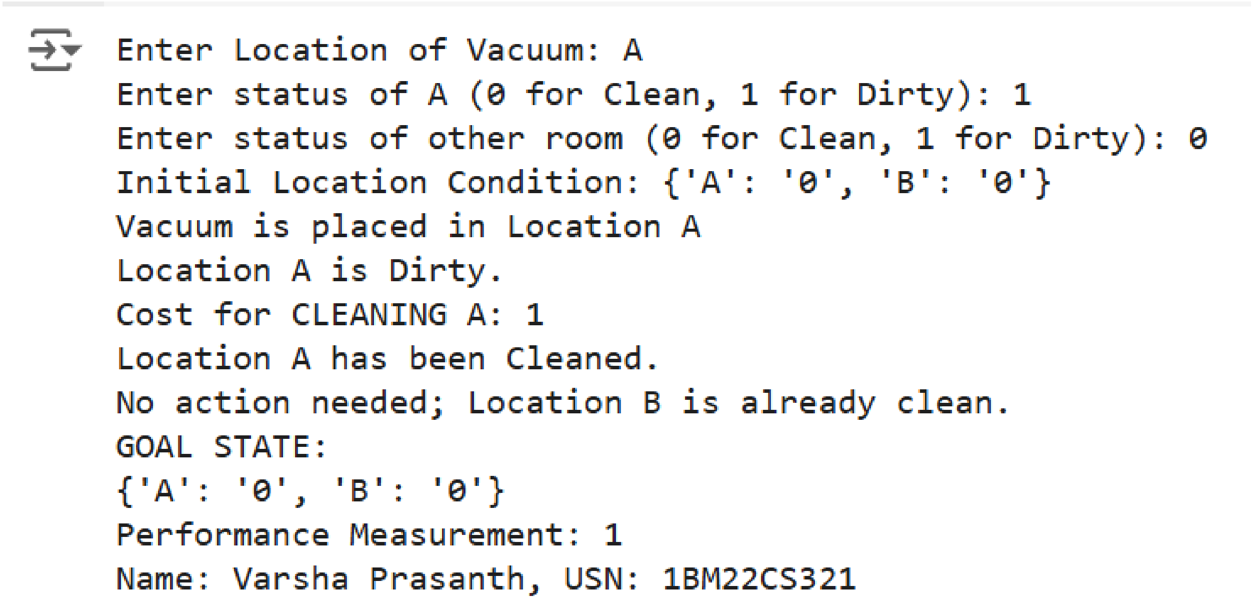
                print("Location A is Dirty.")
                print("Moving LEFT to Location A.")
                cost += 1  # Cost for moving left
                print("COST for moving LEFT: " + str(cost))
                # Suck the dirt and mark it as clean
                goal_state['A'] = '0'
                cost += 1  # Cost for suck
                print("COST for SUCK: " + str(cost))
                print("Location A has been Cleaned.")
            else:
                print("No action needed; Location A is already clean.")

    # Done cleaning
    print("GOAL STATE: ")
    print(goal_state)
    print("Performance Measurement: " + str(cost))

# Call the function to run the vacuum world simulation
vacuum_world()
name = "Varsha Prasanth"
usn = "1BM22CS321"
print(f"Name: {name}, USN: {usn}")
```

OUTPUT:



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Enter Location of Vacuum: A
Enter status of A (0 for Clean, 1 for Dirty): 1
Enter status of other room (0 for Clean, 1 for Dirty): 0
Initial Location Condition: {'A': '0', 'B': '0'}
Vacuum is placed in Location A
Location A is Dirty.
Cost for CLEANING A: 1
Location A has been Cleaned.
No action needed; Location B is already clean.
GOAL STATE:
{'A': '0', 'B': '0'}
Performance Measurement: 1
Name: Varsha Prasanth, USN: 1BM22CS321
```