

## LAB-2

### VACCUM CLEANER AGENT

#### CODE:-

```
def vacuum_cleaner():  
    cost = 0  
  
    # Input states  
    state_A = int(input("Enter state of A (0 for clean, 1 for dirty): "))  
    state_B = int(input("Enter state of B (0 for clean, 1 for dirty): "))  
    location = input("Enter location (A or B): ").upper()  
  
    # Function to check if both places are clean  
    def both_clean():  
        return state_A == 0 and state_B == 0  
  
    if both_clean():  
        print("Turning vacuum off")  
    else:  
        if location == 'A':  
            if state_A == 1:  
                print("Cleaned A.")  
                cost += 1  
                state_A = 0  
            else:  
                print("A is clean")
```

```
if state_B == 1:
    print("Moving vacuum right")
    print("Cleaned B.")
    cost += 1
    state_B = 0
    # Confirm B is clean now
    b_clean = int(input("Is B clean now? (0 if clean, 1 if dirty): "))
    state_B = b_clean

    # Check if A is dirty again
    a_dirty = int(input("Is A dirty? (0 if clean, 1 if dirty): "))
    state_A = a_dirty

    if state_A == 0:
        print("A is clean")
    else:
        print("A is dirty")

    print("Moving vacuum left")

elif location == 'B':
    if state_B == 1:
        print("Cleaned B.")
        cost += 1
        state_B = 0
```

else:

print("B is clean")

if state\_A == 1:

print("Moving vacuum left")

print("Cleaned A.")

cost += 1

state\_A = 0

# Confirm A is clean now

a\_clean = int(input("Is A clean now? (0 if clean, 1 if dirty): "))

state\_A = a\_clean

# Check if B is dirty again

b\_dirty = int(input("Is B dirty? (0 if clean, 1 if dirty): "))

state\_B = b\_dirty

if state\_B == 0:

print("B is clean")

else:

print("B is dirty")

print("Moving vacuum right")

print(f"Cost: {cost}")

print({'A': state\_A, 'B': state\_B})

# Run the vacuum cleaner simulation

vacuum\_cleaner()

## OUTPUT:-

```
IDLE Shell 3.13.5
File Edit Shell Debug Options Window Help
Python 3.13.5 (tags/v3.13.5:6cb20a2, Jun 11 2025, 16:15:46) [MSC v.1943 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.

>>>
===== RESTART: C:/319/LAB-2.py =====
Enter state of A (0 for clean, 1 for dirty): 0
Enter state of B (0 for clean, 1 for dirty): 0
Enter location (A or B): A
Turning vacuum off
Cost: 0
{'A': 0, 'B': 0}

>>>
>>>
===== RESTART: C:/319/LAB-2.py =====
Enter state of A (0 for clean, 1 for dirty): 0
Enter state of B (0 for clean, 1 for dirty): 1
Enter location (A or B): A
A is clean
Moving vacuum right
Cleaned B.
Is B clean now? (0 if clean, 1 if dirty): 0
Is A dirty? (0 if clean, 1 if dirty): 0
A is clean
Moving vacuum left
Cost: 1
{'A': 0, 'B': 0}

>>>
===== RESTART: C:/319/LAB-2.py =====
Enter state of A (0 for clean, 1 for dirty): 1
Enter state of B (0 for clean, 1 for dirty): 0
Enter location (A or B): A
Cleaned A.
Cost: 1
{'A': 0, 'B': 0}

>>> |
```