

```

count = 0

def rec(state, loc):

    global count

    if state['A'] == 0 and state['B'] == 0:

        print("Turning vacuum off")

        return

    if state[loc] == 1:

        state[loc] = 0

        count += 1

        print(f"Cleaned {loc}.")

        next_loc = 'B' if loc == 'A' else 'A'

        state[loc] = int(input(f"Is {loc} clean now? (0 if clean, 1 if dirty): "))

        if (state[next_loc] != 1):

            state[next_loc] = int(input(f"Is {next_loc} dirty? (0 if clean, 1 if dirty): "))

    if (state[loc] == 1):

        rec(state, loc)

    else:

        next_loc = 'B' if loc == 'A' else 'A'

        dire = "left" if loc == "B" else "right"

        print(loc, "is clean")

        print(f"Moving vacuum {dire}")

        if state[next_loc] == 1:

            rec(state, next_loc)

```

```

state = {}

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): "))

loc = input("Enter location (A or B): ")

rec(state, loc)

print("Cost:",count)

print(state)

```

```

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}

```

```

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
B is clean
Moving vacuum left
Cost: 1
{'A': 0, 'B': 0}

```

```

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.
Is A clean now? (0 if clean, 1 if dirty): 0
Is B dirty? (0 if clean, 1 if dirty): 0
A is clean
Moving vacuum right
Cost: 1
{'A': 0, 'B': 0}

```

```
Enter state of A (0 for clean, 1 for dirty): 1
Enter state of B (0 for clean, 1 for dirty): 1
Enter location (A or B): A
Cleaned A.
Is A clean now? (0 if clean, 1 if dirty): 0
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
B is clean
Moving vacuum left
Cost: 2
{'A': 0, 'B': 0}
```