VACCUM CLEANER FOR 4 ROOMS

```
def vacuum_world_4_locations():
    state = {
        'A': int(input("Enter state of A (0 for clean, 1 for dirty): ")),
        'B': int(input("Enter state of B (0 for clean, 1 for dirty): ")),
        'C': int(input("Enter state of C (0 for clean, 1 for dirty): ")),
        'D': int(input("Enter state of D (0 for clean, 1 for dirty): "))
    }
    location = input("Enter location (A, B, C, or D): ").strip().upper()
    cost = 0
    locations = ['A', 'B', 'C', 'D']
    current_index = locations.index(location)
    while any(value == 1 for value in state.values()):
        current_loc = locations[current_index]
        if state[current_loc] == 1:
            print(f"Cleaned {current_loc}.")
            state[current_loc] = 0
            cost += 1
        else:
            print(f"{current_loc} is clean")
        if any(value == 1 for value in state.values()):
            dirty_indices = [i for i, loc in enumerate(locations) if state[loc] == 1]
            nearest_dirty = min(dirty_indices, key=lambda i: abs(i - current_index))
            if nearest_dirty > current_index:
                print("Moving vacuum right")
                current_index += 1
                cost += 1
            elif nearest_dirty < current_index:
                print("Moving vacuum left")
                current_index -= 1
                cost += 1
```

```
    print(f"Cost: {cost}")
    print(state)

vacuum_world_4_locations()
```

OUTPUT

```
Enter state of A (0 for clean, 1 for dirty): 1
Enter state of B (0 for clean, 1 for dirty): 1
Enter state of C (0 for clean, 1 for dirty): 0
Enter state of D (0 for clean, 1 for dirty): 1
Enter location (A, B, C, or D): C
C is clean
Moving vacuum left
Cleaned B.
Moving vacuum left
Cleaned A.
Moving vacuum right
B is clean
Moving vacuum right
C is clean
Moving vacuum right
Cleaned D.
Cost: 8
{'A': 0, 'B': 0, 'C': 0, 'D': 0}
```