Vaccum Cleaner

```
#For two quadrants
def vacuum_cleaner_simulation():

    current_room = input("Enter current room either A or B: ").upper()
    room_A = int(input("Is Room A dirty? (yes:1/no:0): "))
    room_B = int(input("Is Room B dirty? (yes:1/no:0): "))

    cost = 0

    def display_rooms():
        print(f"Room A: {'Clean' if room_A == 0 else 'Dirty'}")
        print(f"Room B: {'Clean' if room_B == 0 else 'Dirty'}")

    print("\nInitial status of rooms:")
    display_rooms()
    print()


    while room_A == 1 or room_B == 1:
        if current_room == 'A' and room_A == 1:
            print("Cleaning Room A...")
            room_A = 0
            cost += 1
        elif current_room == 'B' and room_B == 1:
            print("Cleaning Room B...")
            room_B = 0
            cost += 1
        else:
            current_room = 'B' if current_room == 'A' else 'A'
            print(f"Moving to Room {current_room}...")
        print("Current status:")
        display_rooms()

    print(f"\nBoth rooms are now clean! Total cost: {cost}")


vacuum_cleaner_simulation()
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#For four quadrants
def vacuum_cleaner_simulation():
    current_room = input("Enter current room (A, B, C, or D): ").upper()
    room_A = int(input("Is Room A dirty? (yes:1/no:0): "))
    room_B = int(input("Is Room B dirty? (yes:1/no:0): "))
    room_C = int(input("Is Room C dirty? (yes:1/no:0): "))
    room_D = int(input("Is Room D dirty? (yes:1/no:0): "))

    cost = 0
    count=2
    def display_rooms():
        print(f"Room A: {'Clean' if room_A == 0 else 'Dirty'}")
        print(f"Room B: {'Clean' if room_B == 0 else 'Dirty'}")
        print(f"Room C: {'Clean' if room_C == 0 else 'Dirty'}")
        print(f"Room D: {'Clean' if room_D == 0 else 'Dirty'}")

    print("\nInitial status of rooms:")
    display_rooms()
    print()


    while room_A == 1 or room_B == 1 or room_C == 1 or room_D == 1:
        if count==0:
          print("Vacuum is recharging")
          count=2
        else:
          if current_room == 'A' and room_A == 1:
              print("Cleaning Room A...")
              room_A = 0
              cost += 1
              count-=1
          elif current_room == 'B' and room_B == 1:
              print("Cleaning Room B...")
              room_B = 0
              cost += 1
              count-=1
          elif current_room == 'C' and room_C == 1:
              print("Cleaning Room C...")
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            room_C = 0
            cost += 1
            count-=1
        elif current_room == 'D' and room_D == 1:
            print("Cleaning Room D...")
            room_D = 0
            cost += 1
            count-=1
        else:
            if current_room == 'A':
                current_room = 'B'
            elif current_room == 'B':
                current_room = 'C'
            elif current_room == 'C':
                current_room = 'D'
            else:
                current_room = 'A'
            print(f"Moving to Room {current_room}...")

    print("\nCurrent status:")
    display_rooms()
    print(f"\nAll rooms are now clean! Total cost: {cost}")

vacuum_cleaner_simulation()
```

Output:

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Enter current room either A or B: A
Is Room A dirty? (yes:1/no:0): 0
Is Room B dirty? (yes:1/no:0): 1

Initial status of rooms:
Room A: Clean
Room B: Dirty

Moving to Room B...
Current status:
Room A: Clean
Room B: Dirty
Cleaning Room B...
Current status:
Room A: Clean
Room B: Clean

Both rooms are now clean! Total cost: 1
Enter current room (A, B, C, or D): C
Is Room A dirty? (yes:1/no:0): 1
Is Room B dirty? (yes:1/no:0): 0
Is Room C dirty? (yes:1/no:0): 1
Is Room D dirty? (yes:1/no:0): 0

Initial status of rooms:
Room A: Dirty
Room B: Clean
Room C: Dirty
Room D: Clean

Cleaning Room C...
Moving to Room D...
Moving to Room A...
Cleaning Room A...

Current status:
Room A: Clean
Room B: Clean
Room C: Clean
Room D: Clean

All rooms are now clean! Total cost: 2
```