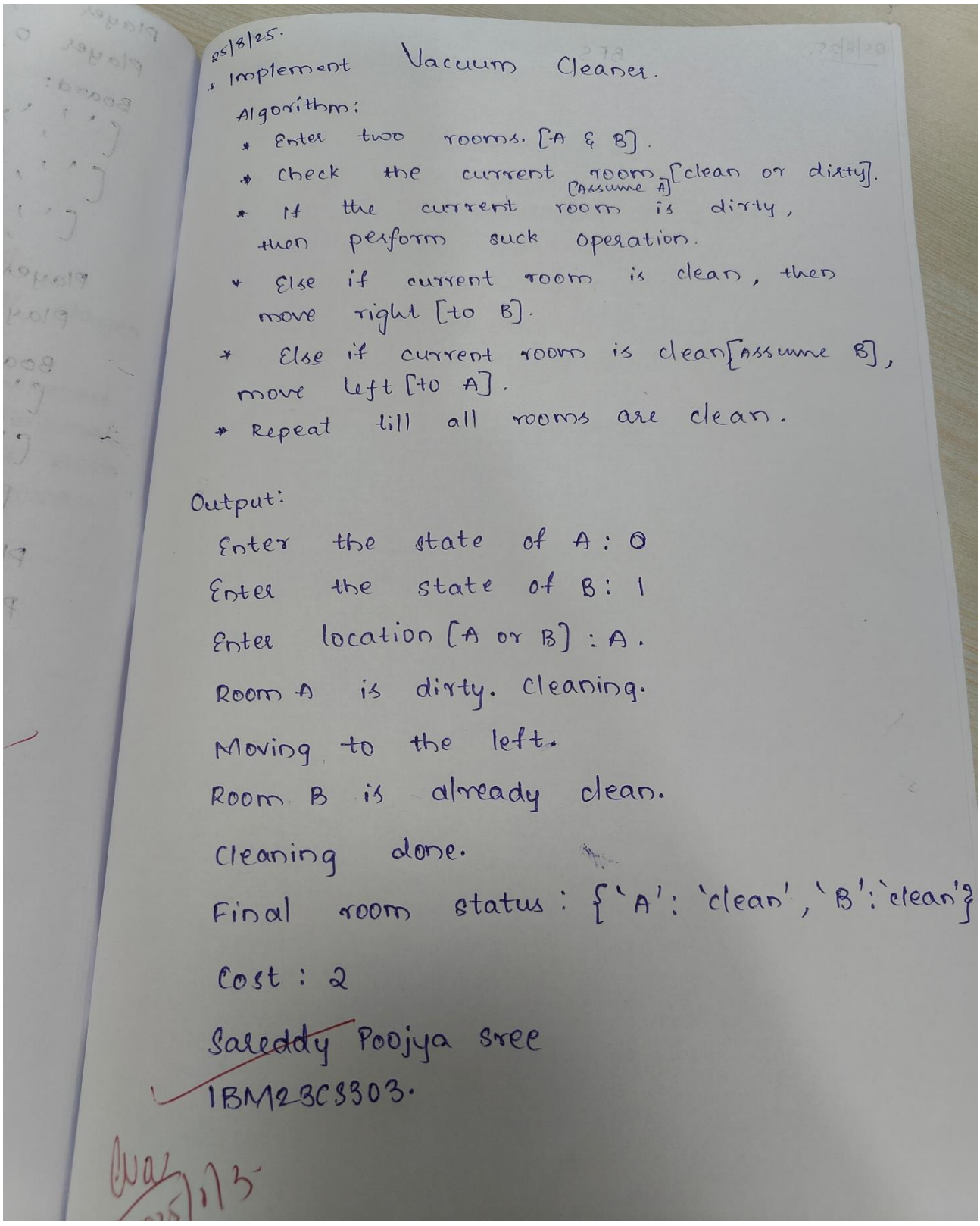
Implement Vacuum Cleaner

Algorithm:



25/8/25.

* Implement Vacuum Cleaner.

Algorithm:

* Enter two rooms. [A & B].
* Check the current room [clean or dirty].
* If the current room [Assume A] is dirty, then perform suck operation.
* Else if current room is clean, then move right [to B].
* Else if current room is clean [Assume B], move left [to A].
* Repeat till all rooms are clean.

Output:

Enter the state of A : 0
Enter the state of B : 1
Enter location [A or B] : A.
Room A is dirty. Cleaning.
Moving to the left.
Room B is already clean.
Cleaning done.
Final room status : {'A': 'clean', 'B': 'clean'}
Cost : 2

Saleddy Poojya Sree
1BM23CS303.

Output:

```
print( 1BM23CS303 )
```

```
Enter status for Room A (0 = clean, 1 = dirty): 0
Enter status for Room B (0 = clean, 1 = dirty): 0
Enter starting room (A or B): A

Initial Room Statuses:
Room A: Clean
Room B: Clean

Vacuum starting in Room A...

Room A is already clean.
Moving to Room B.
Room B is already clean.

Final Room Statuses:
Room A: Clean
Room B: Clean

cost : 1
Sareddy Poojya Sree
1BM23CS303
```

```
print("Sareddy Poojya Sree")
print("1BM23CS303")
```

```
Enter status for Room A (0 = clean, 1 = dirty): 0
Enter status for Room B (0 = clean, 1 = dirty): 1
Enter starting room (A or B): A

Initial Room Statuses:
Room A: Clean
Room B: Dirty

Vacuum starting in Room A...

Room A is already clean.
Moving to Room B.
Room B is dirty. Performing SUCK action.

Final Room Statuses:
Room A: Clean
Room B: Clean

cost : 2
Sareddy Poojya Sree
1BM23CS303
```

```
print("1BM23CS303")
```

```
Enter status for Room A (0 = clean, 1 = dirty): 1
Enter status for Room B (0 = clean, 1 = dirty): 0
Enter starting room (A or B): A

Initial Room Statuses:
Room A: Dirty
Room B: Clean

Vacuum starting in Room A...

Room A is dirty. Performing SUCK action.
Moving to Room B.
Room B is already clean.

Final Room Statuses:
Room A: Clean
Room B: Clean

cost : 2
Sareddy Poojya Sree
1BM23CS303
```

```
Enter status for Room A (0 = clean, 1 = dirty): 1
Enter status for Room B (0 = clean, 1 = dirty): 1
Enter starting room (A or B): A

Initial Room Statuses:
Room A: Dirty
Room B: Dirty

Vacuum starting in Room A...

Room A is dirty. Performing SUCK action.
Moving to Room B.
Room B is dirty. Performing SUCK action.

Final Room Statuses:
Room A: Clean
Room B: Clean

cost : 3
Sareddy Poojya Sree
1BM23CS303
```

Code:

```python
def vacuum_cleaner_with_start_choice():
    total_cost = 0

    # Ask user for room statuses
    try:
        room_a_status = int(input("Enter status for Room A (0 = clean, 1 = dirty): "))
        room_b_status = int(input("Enter status for Room B (0 = clean, 1 = dirty): "))

        if room_a_status not in [0, 1] or room_b_status not in [0, 1]:
            print("Invalid input. Please enter 0 or 1 only.")
            return

        start_room = input("Enter starting room (A or B): ").strip().upper()
        if start_room not in ['A', 'B']:
            print("Invalid starting room. Please enter 'A' or 'B'.")
            return

    except ValueError:
        print("Invalid input. Please enter numeric values only.")
        return

    # Store room statuses
    room_status = {'A': room_a_status, 'B': room_b_status}

    # Print initial status
    print("\nInitial Room Statuses:")
    print(f"Room A: {'Dirty' if room_status['A'] == 1 else 'Clean'}")
    print(f"Room B: {'Dirty' if room_status['B'] == 1 else 'Clean'}")

    print(f"\nVacuum starting in Room {start_room}...\n")

    # Define room order depending on start
    if start_room == 'A':
        rooms_to_visit = ['A', 'B']
    else:
        rooms_to_visit = ['B', 'A']
```

```python
    # Main loop over rooms
    for room in rooms_to_visit:
        if room_status[room] == 1:
            print(f"Room {room} is dirty. Performing SUCK action.")
            room_status[room] = 0
            total_cost += 1
        else:
            print(f"Room {room} is already clean.")

        # Move to next room if not last
        if room != rooms_to_visit[-1]:
            next_room = 'B' if room == 'A' else 'A'
            print(f"Moving to Room {next_room}.")
            total_cost += 1

    # Final room status
    print("\nFinal Room Statuses:")
    print(f"Room A: {'Dirty' if room_status['A'] == 1 else 'Clean'}")
    print(f"Room B: {'Dirty' if room_status['B'] == 1 else 'Clean'}")

    print(f"\ncost : {total_cost}")

# Run the program
vacuum_cleaner_with_start_choice()

print("Sareddy Poojya Sree")
print("1BM23CS303")
```