SHREE SANKET

1BM22CS261

LAB-3: VACUUM WORLD

CODE:

```
from ctypes import c_char

cost = 0

status = [0, 0]

A = 0

B = 1


def suck(location):
    global cost
    if status[location] == 0:
        print("The room is already tidy.")
    else:
        status[location] = 0
        cost += 1
        print("Room has been cleaned.")
    if location == A:
        print("Is room A dirty again? (1 for yes, 0 for no)")
        status[A] = int(input())
    elif location == B:
        print("Is room B dirty again? (1 for yes, 0 for no)")
        status[B] = int(input())


def move_left(location):
```

```
    print("Switching to room A.")
    return A

def move_right(location):
    print("Switching to room B.")
    return B

def vaccume_cleaner(location):
    global cost
    global status
    global A, B
    if status[A] == 0 and status[B] == 0:
        print("Both rooms are clean. Total cost: " + str(cost))
        return
    if status[location] == 1:
        suck(location)
    else:
        print("The current room is already clean.")

    if location == A:
        new_loc = move_right(location)
        vaccume_cleaner(new_loc)
    elif location == B:
        new_loc = move_left(location)
        vaccume_cleaner(new_loc)
def main():
    global A, B
    global status
    print("Please input the cleanliness of room A (1 for dirty, 0 for clean):")
    status[A] = int(input())
```

```
  print("Please input the cleanliness of room B (1 for dirty, 0 for clean):")
    status[B] = int(input())
    print("Where is the vacuum cleaner currently located? (0 for A, 1 for B):")
    location = int(input())
    vaccume_cleaner(location)


main()
```

output:

CASE 1) ROOM A IS DIRTY AND ROOM B IS ALSO DIRTY

```
PS D:\python> py vaccum.py
Please input the cleanliness of room A (1 for dirty, 0 for clean):
1
Please input the cleanliness of room B (1 for dirty, 0 for clean):
1
Where is the vacuum cleaner currently located? (0 for A, 1 for B):
0
Room has been cleaned.
Is room A dirty again? (1 for yes, 0 for no)
0
Switching to room B.
Room has been cleaned.
Is room B dirty again? (1 for yes, 0 for no)
0
Switching to room A.
Both rooms are clean. Total cost: 2
PS D:\python>
```

CASE 2) BOTH THE ROOMS ARE CLEAN

```
PS D:\python> py vaccum.py
Please input the cleanliness of room A (1 for dirty, 0 for clean):
0
Please input the cleanliness of room B (1 for dirty, 0 for clean):
0
Where is the vacuum cleaner currently located? (0 for A, 1 for B):
0
Both rooms are clean. Total cost: 0
PS D:\python>
```

CASE 3) ROOM A IS DIRTY ROOM B IS CLEAN

```
PS D:\python> py vaccum.py
Please input the cleanliness of room A (1 for dirty, 0 for clean):
1
Please input the cleanliness of room B (1 for dirty, 0 for clean):
0
Where is the vacuum cleaner currently located? (0 for A, 1 for B):
1
The current room is already clean.
Switching to room A.
Room has been cleaned.
Is room A dirty again? (1 for yes, 0 for no)
0
Switching to room B.
Both rooms are clean. Total cost: 1
PS D:\python>
```

CASE 4) ROOM A IS CLEAN B IS DIRTY

```
PS D:\python> py vaccum.py
Please input the cleanliness of room A (1 for dirty, 0 for clean):
0
Please input the cleanliness of room B (1 for dirty, 0 for clean):
1
Where is the vacuum cleaner currently located? (0 for A, 1 for B):
0
The current room is already clean.
Switching to room B.
Room has been cleaned.
Is room B dirty again? (1 for yes, 0 for no)
0
Switching to room A.
Both rooms are clean. Total cost: 1
PS D:\python>
```