25/08/25

Algorithm.
for two rooms.

Step1 : Start the vaccum cleaner implementation
Step2 : Consider two rooms A & B
Step3 : Consider the actions as left, right & sweep as L, R, & S
Step4 : Start the vaccum, check if the dust present by recording a direction of the dust.
Step5 : Clean & send the vaccum in recorded direction

Step1 : Consider room A & B
Step2 : Start the vaccum cleaner
Step3 : Check if dirt present in room A, if
Yes record the direction.
if no switch off the vaccum cleaner.
step4 : ask user to select ~~choo~~ option
① Clean the room
② Stay in room
③ Go to another room.
Step5 : If user select ① sent a vaccum cleaner in the recorded direction.
if user select ② stay in room
if user select 3 sent to another room.
Step 6 : Repeat Steps from step 3.
Step7 : cost calculation

$O(b^d)$

$b = 4$

$d = 2$

$O(4^2) = O(16)$

Step 8 : Stop.

output:

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
Cleaning A
Moving vacuum right
Cleaning B.
Turning vacuum off
cost : 3
{'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
Moving vacuum right.
Cleaning B.
Turning vacuum off
cost 2
{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): 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
Cleaning B. Enter location (A or B): B
Cleaning B
Turning vacuum off
cost 1
{'A': 0, 'B': 0}

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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
Cleaning A.
Moving vacuum right
Cleaning B.
Turning vacuum off
Cost: 3
{'A': 0, 'B': 0}
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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
Cleaning A.
Turning vacuum off
Cost: 1
{'A': 0, 'B': 0}
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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
Moving vacuum right
Cleaning B.
Turning vacuum off
Cost: 2
{'A': 0, 'B': 0}
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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): B
Cleaning B.
Turning vacuum off
Cost: 1
{'A': 0, 'B': 0}
1BM23CS341
```