

1/10/2024.

DATE:

PAGE:

A. right

Vacuum Cleaner

Initialize  $r_s = \{ \text{"room1"} : \text{"clean"}, \text{"room2"} : \text{"dirty"} \}$   
 $room = [\text{"room1"}, \text{"room2"}]$

Input ON from user

$c = 0$

If "ON":

for  $k, v$  in  $\text{list}(r_s.items())$ :  
 get room with dirty.

while  $c \% 2 \neq 0$  in  $(0, 1)$ :

$s = \text{check\_room}(room[c])$

$r_s[room[c]] = \text{random}(\text{"clean"}, \text{"dirty"})$

$r_s[room2] \neq \text{"clean"} \text{ or } c = c + 1$

$c \% 2 \text{ in } (0, 1)$ :

if  $s$ :

break

"dirty"]

$\text{check\_room}(room)$

if  $r_s[room] == \text{"dirty"} \text{ then}$

print("Room is dirty")

$r_s[room] = \text{"clean"}$

print("Room is cleaned")

if  $r_s[\text{"room1"}] == \text{"clean"} \text{ and}$

$r_s[\text{"room2"}] == \text{"clean"} :$

return True

return False

*Shah*



```
import random
```

```
def check_room(room):
```

```
    if r_s[room] == "dirty":
```

```
        print(f"{room} is dirty")
```

```
        r_s[room] = "clean"
```

```
        print(f"{room} is cleaned")
```

```
        return True
```

```
    else:
```

```
        if r_s[room] == "clean":
```

```
            print(f"{room} is clean")
```

```
            return False
```

```
    return False
```

```
def all_rooms_clean():
```

```
    return all(status == "clean" for  
               status in  
               r_s.values())
```

```
r_s = {"room1": "dirty", "room2": "dirty"}
```

```
room = ["room1", "room2"]
```

```
on = input("Do you want to turn on (yes/no)?")
```

```
if on == "yes":
```

```
    while True:
```

```
        cleaned_any = False
```

```
        for r in room:
```

```
            cleaned check_room(r)
```

```
            if cleaned:
```



cleaned\_any = True

```
if all_rooms_clean():
    print("Both are clean")
    break
```

```
if cleaned_any:
    for r in rooms:
        r_s[r] = random.choice(["dirty",
                                  "clean"])
```

else:

print("cleaner is off")

Output:

Do you want to turn on (yes/no) yes

room1 is clean

room2 is dirty

room 2 is cleaned

room1 is dirty

room1 is cleaned

room2 is clean

Both rooms are clean

[R1] → [R2]

*Subash*  
21/10/24

Initial

Room1  
(clean)

Action  
move  
right

Room1 Room2 clean  
(clean) (dirty) move  
left

Room1 Room2 Room2  
(clean) (dirty) (clean) move  
exit

Do you want to turn ON the cleaner? (yes/no) yes

room1 is clean

room2 is dirty

room2 is cleaned

room1 is dirty

room1 is cleaned

room2 is dirty

room2 is cleaned

room1 is dirty

room1 is cleaned

room2 is dirty

room2 is cleaned

room1 is dirty

room1 is cleaned

room2 is dirty

room2 is cleaned

room1 is dirty

room1 is cleaned

room2 is dirty

room2 is cleaned

Both rooms are clean. Exiting.

>>>