

PROGRAM-6 VACUUM CLEANER PROBLEM

AIM :

To create a python program to solve the vacuum cleaner problem.

PROGRAM :

```
import random
```

```
def display(room):  
    print(room)
```

```
room = [[1, 1, 1, 1],  
        [1, 1, 1, 1],  
        [1, 1, 1, 1],  
        [1, 1, 1, 1],]  
print("All the rooom are dirty")  
display(room)
```

```
x =0  
y= 0  
while x < 4:  
    while y < 4:  
        room[x][y] = random.choice([0,1])  
        y+=1  
    x+=1  
    y=0
```

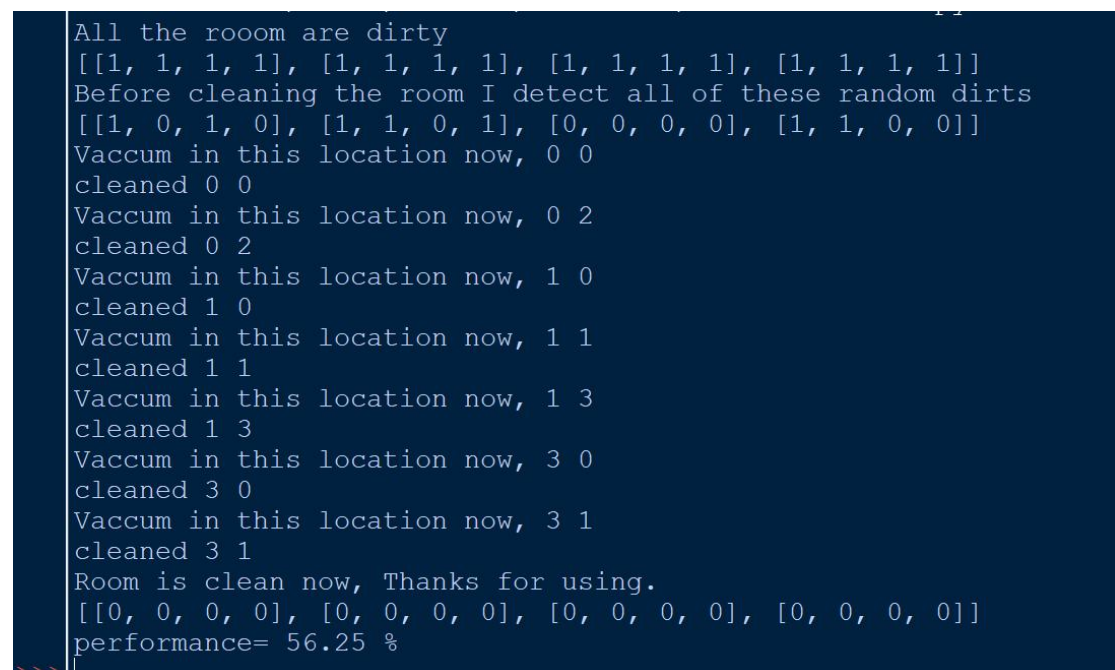
```
print("Before cleaning the room I detect all of these random  
dirts")  
display(room)  
x =0  
y= 0  
z=0
```

```

while x < 4:
    while y < 4:
        if room[x][y] == 1:
            print("Vaccum in this location now,",x, y)
            room[x][y] = 0
            print("cleaned", x, y)
            z+=1
        y+=1
    x+=1
    y=0
pro= (100-((z/16)*100))
print("Room is clean now, Thanks for using.")
display(room)
print('performance=',pro,'%')

```

OUTPUT :



```

All the room are dirty
[[1, 1, 1, 1], [1, 1, 1, 1], [1, 1, 1, 1], [1, 1, 1, 1]]
Before cleaning the room I detect all of these random dirts
[[1, 0, 1, 0], [1, 1, 0, 1], [0, 0, 0, 0], [1, 1, 0, 0]]
Vaccum in this location now, 0 0
cleaned 0 0
Vaccum in this location now, 0 2
cleaned 0 2
Vaccum in this location now, 1 0
cleaned 1 0
Vaccum in this location now, 1 1
cleaned 1 1
Vaccum in this location now, 1 3
cleaned 1 3
Vaccum in this location now, 3 0
cleaned 3 0
Vaccum in this location now, 3 1
cleaned 3 1
Room is clean now, Thanks for using.
[[0, 0, 0, 0], [0, 0, 0, 0], [0, 0, 0, 0], [0, 0, 0, 0]]
performance= 56.25 %

```

RESULT :

The program has been executed successfully.