Assignment 4

Q1) (a) WAP to implement a performance-measuring environment simulator for the following vacuum-cleaner world diagram. Your implementation should be modular so that the sensors, actuators, and environment characteristics (size, shape, dirt placement etc.) can be changed easily.

(b) In the addition of the above program (i.e., in 1(a)), WAP to implement a simple reflex agent for the vacuum environment. Run the environment with this agent for all possible initial dirt configurations and agent locations.

Ans 1)

PEAS Table for Q1a and Q1b : Vacuum Cleaner Agent

AGENT	PERFORMANCE MEASURE	ENVIRONMENT	ACTUATORS	SENSORS
Vacuum-Cleaner	Cleanliness	Room	Wheels	Camera
	Efficiency	Table	Brushes	Dirt Detection Sensor
	Battery Life	Wood Floor	Vacuum Extractor	Cliff sensor
	Security	Carpet		Bump Sensor
		Various Obstacles		Infrared Wall Sensor

Precept Sequence Table:

Precept Sequence	**Action**
[Location A, clean]	Move right to reach B
[Location A, dirty]	Suck and move to B
[Location B, clean]	Move left to reach A
[Location B, dirty]	Suck and move to A

Python Program for Que1 a) and Que1 b)