**Faculty of Computing**



**Artificial Intelligence Spring 2025**

**Lab # 8**

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**Submitted by:**

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**Tasks**

**Question 01:**

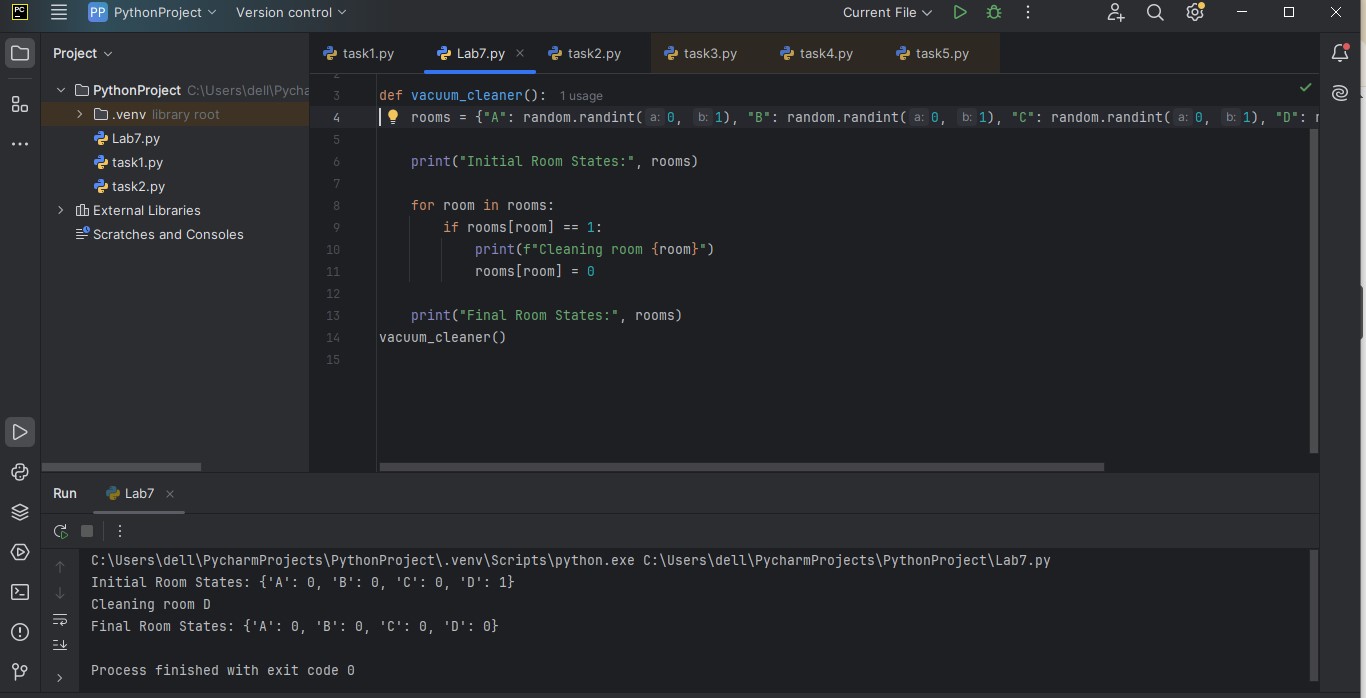
Write a program for a simple reflex agent. The agent will act as a vacuum cleaner. In the first activity, we will create an environment for the agent.

* The environment is divided into 4 portions A,B,C and D.

* Then define two states for each portion.

* 0 indicates the cleaned state and 1 indicates the dirty state.

* We will initialize each portion with a random state that would be either 0 or 1.



**Question 02:**

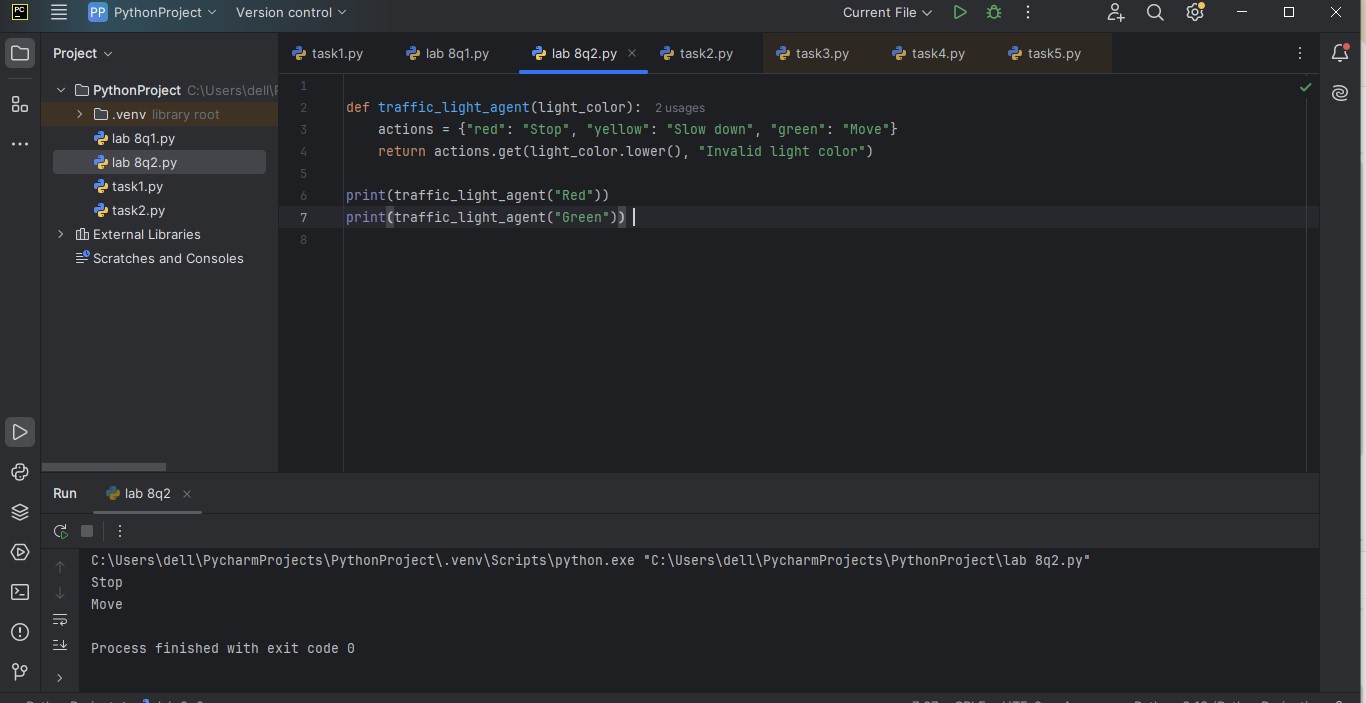
Create a Simple Reflex Agent that:

* + Observes traffic light color (red, yellow, green).
  + Takes an action based on the light:

Red → Stop

Yellow → Slow down

Green → Move



**Question 03:**

Implement an automatic door agent that:

* + Opens if it detects a person near the door.
  + Closes if no person is detected.

Add a security feature where the door stays closed at night unless an authorized person is detected.

