Programming Assignment: Simulate your Intelligence!

1. Problem statement

- Implement simple intelligent agent (*Simple reflex agent for vacuum cleaner agent in our context.*)
  Consider the vacuum cleaner world as shown in Figure 1 and eight possible states in vacuum world as shown in Figure 2.

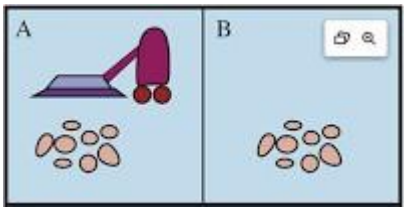

Figure 1: Vacuum Cleaner World

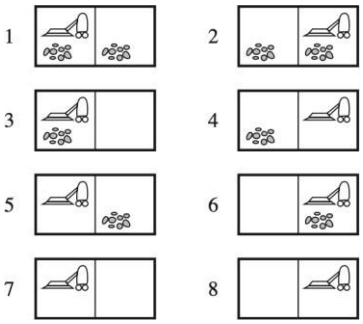

Figure 2: The eight possible states in vacuum world

- Draw the state space graph of the vacuum cleaner world domain that we have taken in to account. (*Our goal is to reach either state 7 or state 8.*)
- Formulate the appropriate algorithms and implement them in any high-level language as per convenient preferably python.

2. Submission

Your submission should include the following:

I. Cover Page
II. Table of Contents (immediately after the cover page)
III. Proper formatting with the potential for future extension (i.e., allow adding pages easily without damaging the structure).

Ensure your document is well-organized, legible, and professional.

3. Warning

The assignment is simple enough, and the instructors too have access to existing online implementations and LLMs. Further, the assignment must be done individually. Any hint of plagiarism will lead to serious implications.

Submission Date: 2025/05/10 (Before the starting of class)