CS 379: Introduction to Artificial Intelligence
Project: 1

Project Guidelines:

1. You **Must** work in the groups of three to complete the project.
2. Use **PYTHON** programming language to complete the project
3. The first deadline for the project is on **November 3rd**. You must present your project on November 3rd along with your group. You are **not allowed to use your Free Pass** on the project.
4. Submit the final report on November 3rd in the AAAI format. You will receive feedback on your report. Make the necessary updates on the report and submit a final version by **November 15th.** The page limit is **four including the references.**

Project Deliverables:

1. You must submit **one ZIP folder** per group. The ZIP folder must be named after all the first names of your group members. For example, Sravya1_Sravya2_Sravya3. The folder must contain the following files:
    a. Working python code: 50 points
    b. Final report as PDF: 30 points
2. Project demo with your group: 20 points

Project description:

Consider the state space for the Blocks World that includes:

1. Five blocks (A, B, C, D, E)
2. The relations among the blocks (AIR, ON, CLEAR, TABLE)
3. Functions (PICK_UP, PUT_DOWN, STACK, MOVE, UNSTACK) performed on the blocks. For the transition from one state to the next state you may use the appropriate functions (actions) logically needed.

Develop an algorithm (write the code) that accepts as inputs a given scene (starting state) of these blocks {their initial placement on the table (T) on each other}, a final scene (destination state) for these blocks and generates (displays) the sequence of scenes (or states) that lead from the starting state to the destination state.

The starting and the destination states will be given to you at the demo, and you run your code to prove it at that time.

Extra credit: 5 points

Make sure your code will also work if the world contains both squares and triangles.