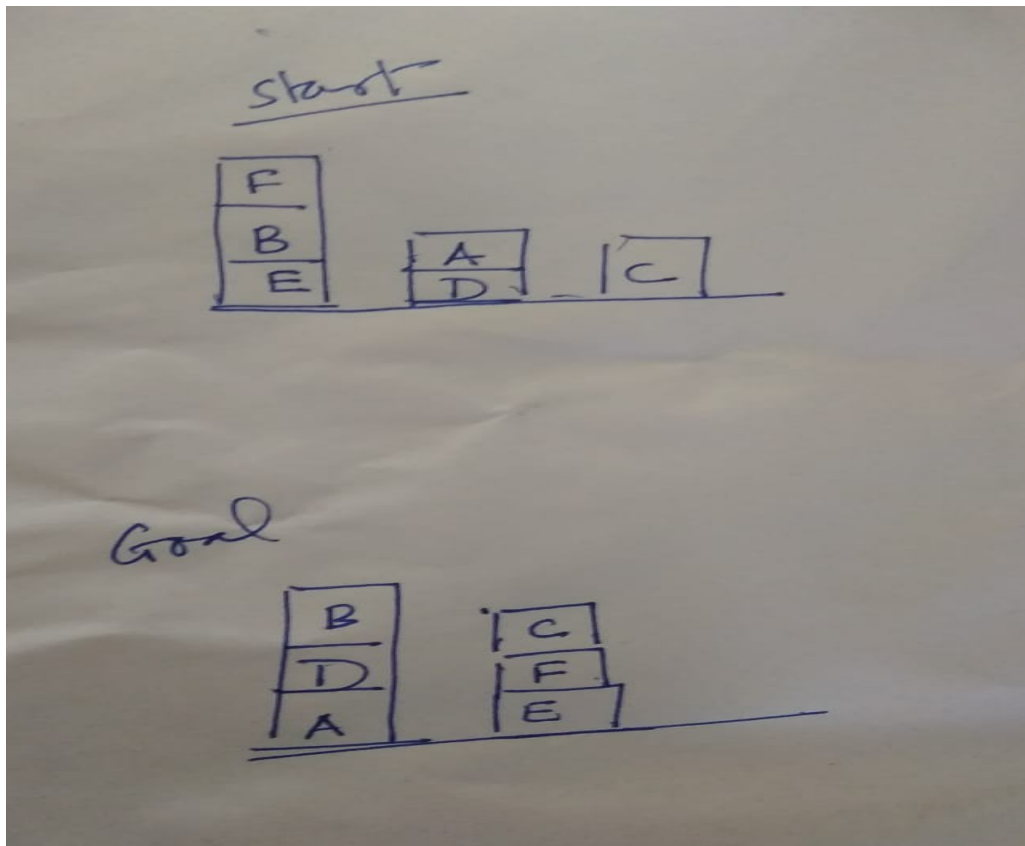


CS 214: Artificial Intelligence Lab  
Spring 2022-23, IIT Dharwad  
Artificial Intelligence Lab  
Assignment-2  
Heuristic Search Algorithms

Domain for this assignment is : Blocks World Domain

Blocks World Domain Game starts with an initial state consisting of a fixed number of blocks arranged in 3 stacks and we can move only top blocks of the stacks and we have to achieve a goal state that is a particular arrangement of blocks by moving these blocks. Blocks World is a planning problem where we know the goal state beforehand and the path to the Goal state is more important.



**Hill Climbing:**

Implement Hill Climbing for the above domain. Write your observations in terms of time and space complexities.

**Report Format :**

1. Brief description about the domain:
  - a. State space
  - b. Start node and goal node
  - c. MOVEGEN and GOALTEST algorithm
2. Heuristic functions considered ( minimum of 2 )
3. Hill Climbing:
  - a. States explored
  - b. Time taken
  - c. Optimal solution.

**NOTE:**

- Due date for the Assignment is *24<sup>th</sup> January 2023 (11:59PM)*
- Penalty for late submission is *10%* per day of secured marks.
- We will run a plagiarism check for all the submissions, if found copied *100%* penalty will be applied.
- Viva and demonstration of your submitted code is mandatory and will be conducted on *25<sup>th</sup> January 2023* in lab hours, we will share the time slots for the same.