Interview Scheduler

Team members :
Akanksha D, Archana R, Maneesha S, Margi B

University : IIITB

Mentor : Ramith Padaki

Project Description

- Interviews and meetings are a part of day to day activities of every corporate industry.

- This project aims at automating the process of scheduling the interviews, thereby reducing the manual effort and human error.

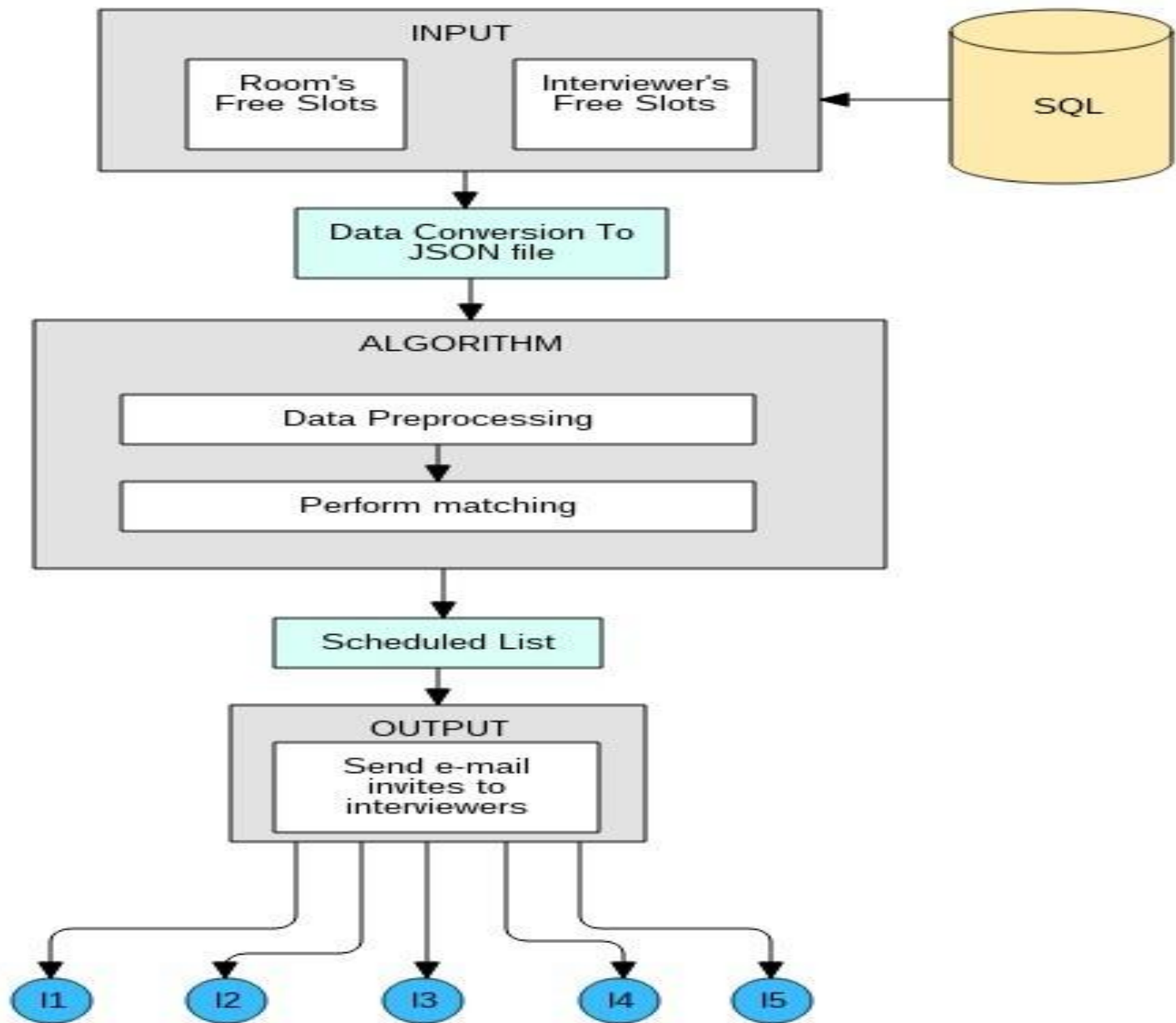- This can be used for scheduling interviews at Amazon.

Problem Statement

- Given a set of free room slots and free interviewer slots, schedule the possible interviews.

- Send an email invite to the interviewers with the details of the time and place of the interview.

Solution

Approaches tried :

- Greedy Algorithm
- Maximum Bipartite matching

Greedy Approach

- Combine all continuous slots of the same room
- Sort the room slots and interviewer slots in the increasing order of the end times followed by start time.
- Assign an interviewer to an available room, and modify the free-busy timings of that room.
- Repeat the above step until all the interviewer slots are scanned.
- Time complexity is O(mn + mlogm + nlogn)
  where n = # of room slots, m = # of interviewer slots

Maximum Bipartite matching

- Interview Scheduling can also be viewed as a Maximum Bipartite Matching (MBP) problem.
- One set of nodes consists of free room slots, and the other one represents the interviewer's slots.
- There exist an edge from interviewer node to room slot node if the interviewer time interval falls within the room slot.
- Max flow from this graph would give the maximum number of interviews that can be scheduled.
- Time complexity O(MaxFlow * |E|)
  where E = # of edges

Assumptions

- Each interview is for one hour duration.

- Interviewer slots are entered for a duration of one hour.

Future Scope

- Enhance the algorithm to accept slots of Interviewees.

- Schedule panel/group interviews

- Flexible interview timings.

Learnings from the project

- Flask server, Python

- Explored the literature on greedy and graph approaches to tackle problems of similar kind.

THANK YOU