

## 1. Name of Your Company

OYO ROOMS

## 2. Project Title

Room Booking Management

## 3. Team

- Harkirat Singh (MySQL Expert)
- Akshit Manhas MS SQL Server Expert)

## 4. Weekly Meeting Hours

We will meet on zoom and work on the project every Wednesday after class for 1 hour (6:30-7:30)

## 5. Project Description

A database is created which records the information about all the classrooms on a college campus and people can reserve a room for a certain date, time and event. The data requirements for this database are summarized as follows:

- Each room is uniquely identified by a room number composed of building, floor and room number (e.g. B123 means B building, floor 1, room 23) as well as room type (office, classroom, lab...), capacity (fixed number of persons can reside in), equipment installed in. Each equipment has name, type and SerialNumber that is unique.
- If a room is a classroom or lab, it has a schedule. The schedule describes the time slot (e.g. from 10 to 12), the occupation reason (e.g. the lecture or lab of the course 2223-001), the instructor who uses the room during that time slot.
- The schedule of a room can be different for every semester.
- An instructor can teach multiple course sectors in a semester.
- People can book a room. When a room is booked, the name of the person who booked, the start time, duration, and purpose (event title) is stored in the database.

## 6. Assumptions about Cardinality and Participations

One room can have multiple equipments. So 1 – M.

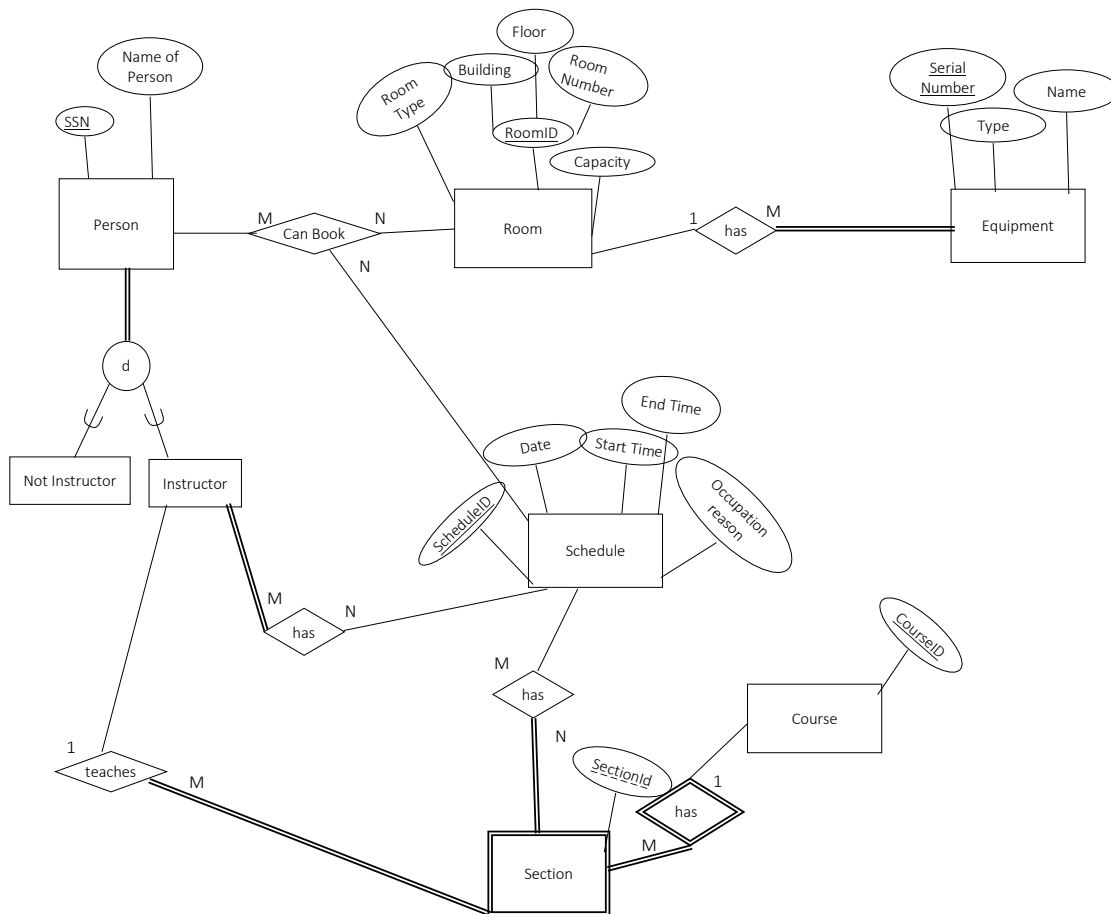
One room can be used by multiple instructors. So 1 – M.

Instructor can teach multiple sections. So 1 – M.

One person can book multiple rooms at different times and one room can be booked by multiple people at different times. M-N

## 7. EER Modeling Diagram

In the following drawing canvas, EER Modeling shapes have been provided. You can copy and replicate them (Ctrl+C to copy and Ctrl+V to paste). You can also select a shape, then press Ctrl button and drag and drop to copy a shape) and edit them to build your diagram.



## 8. ER-Model Mapping to Database Relational Schema

Person(SSN, Name of Person )

Room ( Building, Floor, RoomNumber, Capacity, RoomType)

Equipment ( SerialNumber, Type, Name, (Building, Floor, RoomNumber) )

Schedule ( ScheduleID, Date, StartTime, EndTime, OccupationReason)

Course (CourseID)

Section (CourseID,SectionID, InstructorSSN)

Person\_Room\_Schedule( SSN, (Building, Floor, RoomNumber), ScheduleID )

Instructor\_Has\_Schedule(InstructorSSN,ScheduleID)

Section\_Has\_Schedule ( (CourseID,SectionID, ), ScheduleID )

## 9. Normalization

All relations must be normalized up to BCNF. You must explain why you believe every relation in your database is normalized.

All values are Atomic, Nothing can have multiple Values. So everything is in First Normal Form.

All Values depend on the full key, There is nothing that depends on the partial key therefore it is also in Second Normal Form.

There is no transitivity in any of the mapping, there fore it means it is in the third Normal form as well.

It is also in BCNF.