

Mini Project Synopsis

HOTEL MANAGEMENT SYSTEM

Submitted as a part of course curriculum for

CORE COURSE IN DATABASE MANAGEMENT SYSTEM



Under the guidance of
Prof Nivedita Kasturi

Submitted by -:

- 1) B Pravena – PES2UG19CS076
- 2) Bharath Kumar S P-PES2UG19CS087
- 3) Bhuvantej R – PES2UG19CS092

Department of Computer Science and
Engineering
Pes University

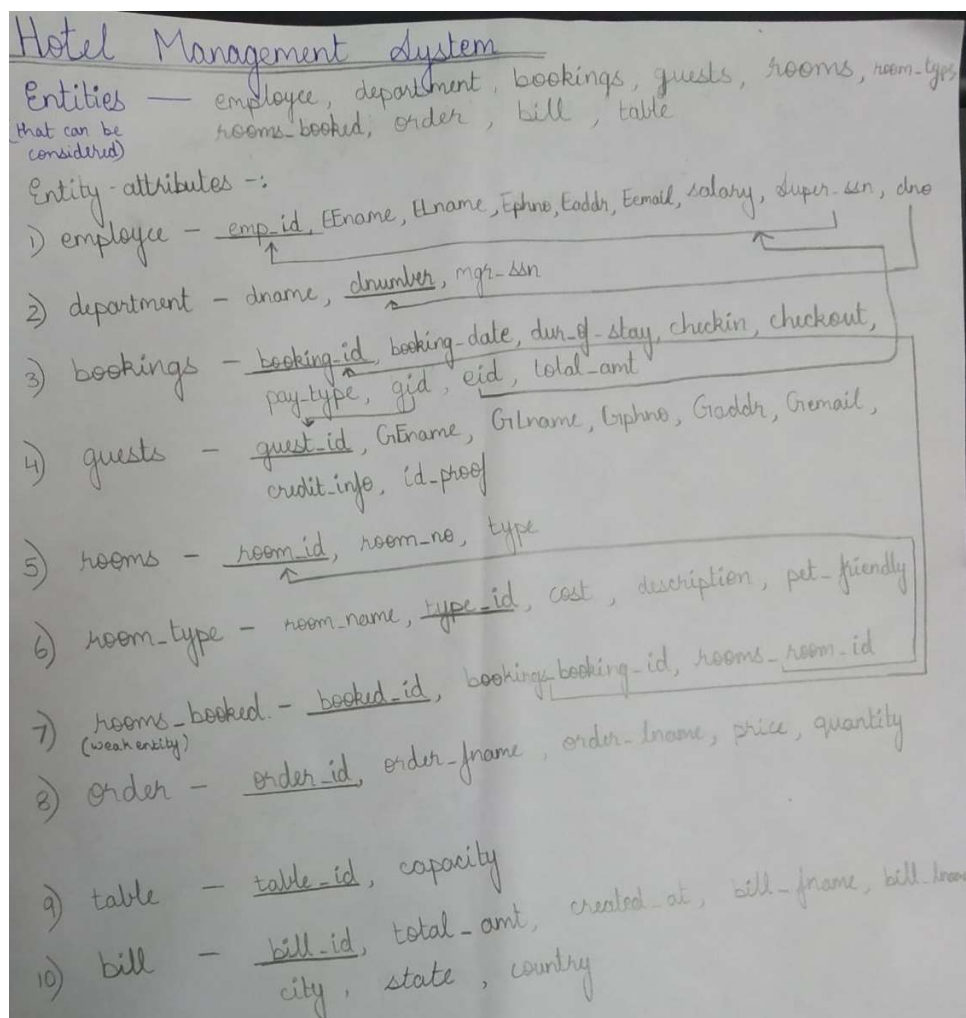
Problem Statement :-

To create an efficient Hotel (lodge + restaurant) management system.

The main objective is to manage the details of employees, bookings, guests at the lodge and customers at the restaurant, rooms, order, bill, etc. A customer can make reservations, change, or cancel reservations through the hotel website. When a customer makes reservations, based on availability employee allots room.

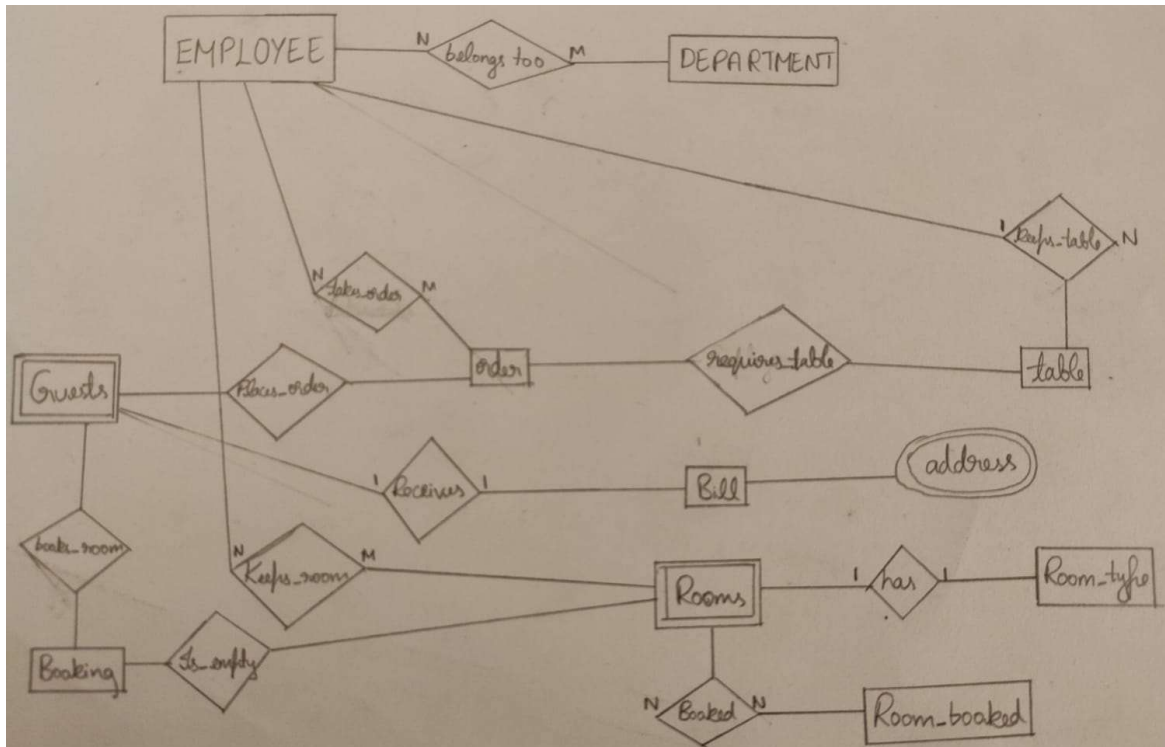
Relational Database Schema (entity and attributes) :-

We have chosen the following entities for our DBMS – employee, department, bookings, guests, rooms, room_type, rooms_booked, order, table and bill. The entities provide details about the workers of the Hotel, its departments, guests' bookings, the customers/guests, rooms, whether a particular room is booked, its type, ordered food, table booked and bill cost.



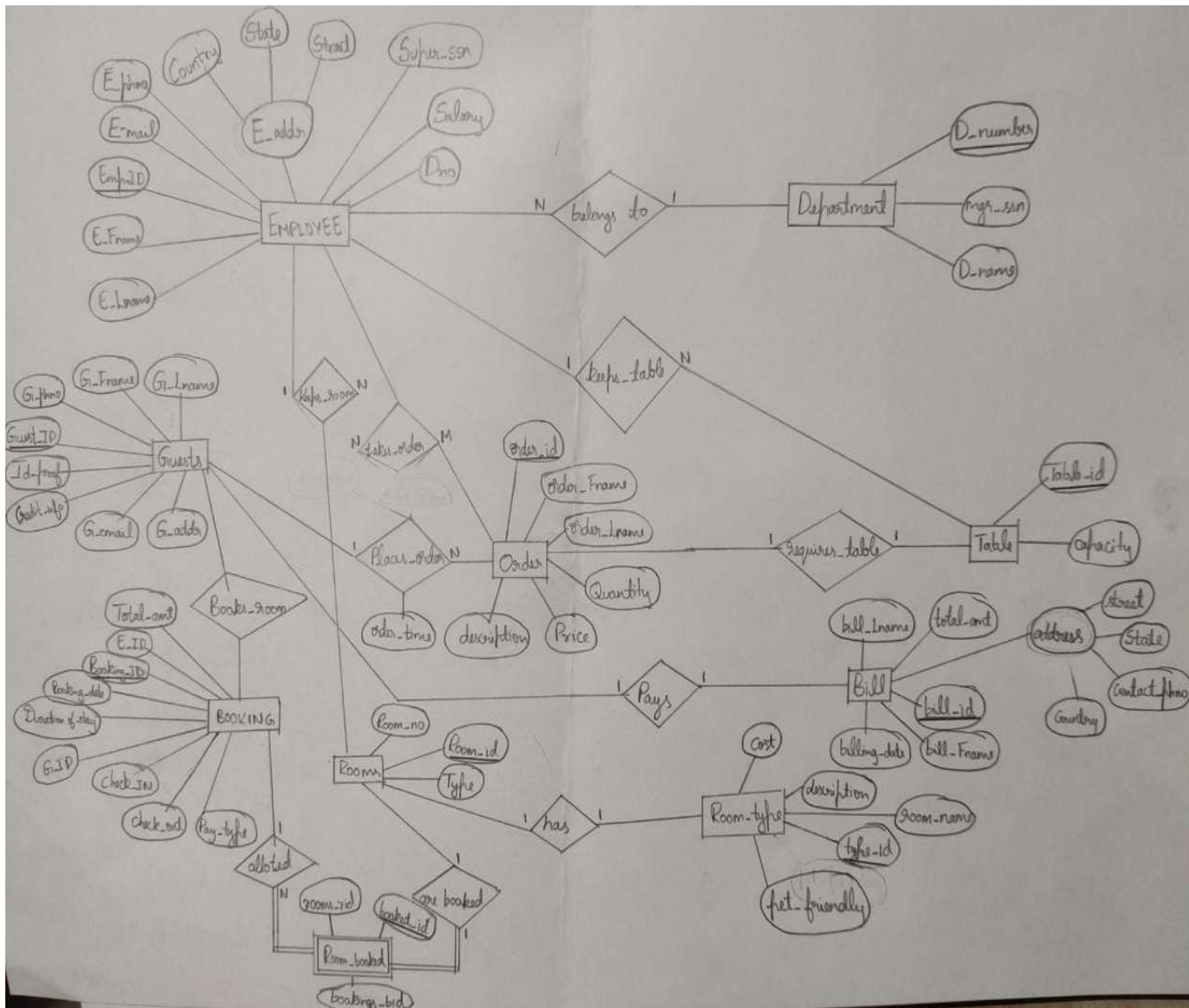
Stages of ER diagram:-

After deciding the entity attributes, we drew a rough ER diagram containing few entities and trying to establish possible relationships between them.



Upon drawing the above, we were able to think of possible relationships for other entities and also make some modifications in the above diagram. We finally concluded with the drawing, assumptions and constraints which are indicated in the diagram below.

Final hand-drawn ER diagram -:



Employee belongs to a **Department**. They keep/maintain **Tables**. They take **Orders** and also maintain/keep **Rooms**. **Guests** place **Orders** which requires a **Table**. They pay the **Bill**. They book rooms by **Booking** and are allotted **Room_booked**. Room has/can be of a particular **Room_type** and only the booked ones are called **Room_booked**.

Its important to note here that Room_booked is a weak entity because it has foreign keys which refer to primary key of Booking and Room. It shows total participation which can be indicated with double line to the relationship. The attribute address is a composite attribute and is present in both Employee and Bill. The respective cardinality ratios are also indicated above in the final hand drawn version of ER diagram.

ER Tool -:

We have use **Día** for drawing the ER diagram.

It's a free and open-source general-purpose diagramming software, developed originally by Alexander Larsson. It supports more than 30 different diagram types like flowcharts, network diagrams, database models, etc. It can easily be installed in Windows, MacOS X or Linux. It can print large diagrams and can also be scripted using the Python programming language.

Reference Links -:

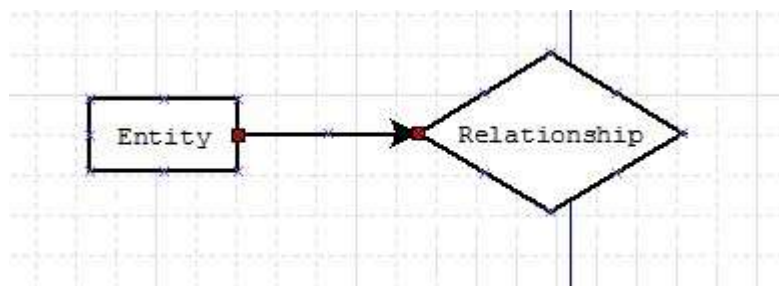
<http://dia-installer.de/download/index.html.en>

<https://www.youtube.com/watch?v=kQV9rbTINoY>

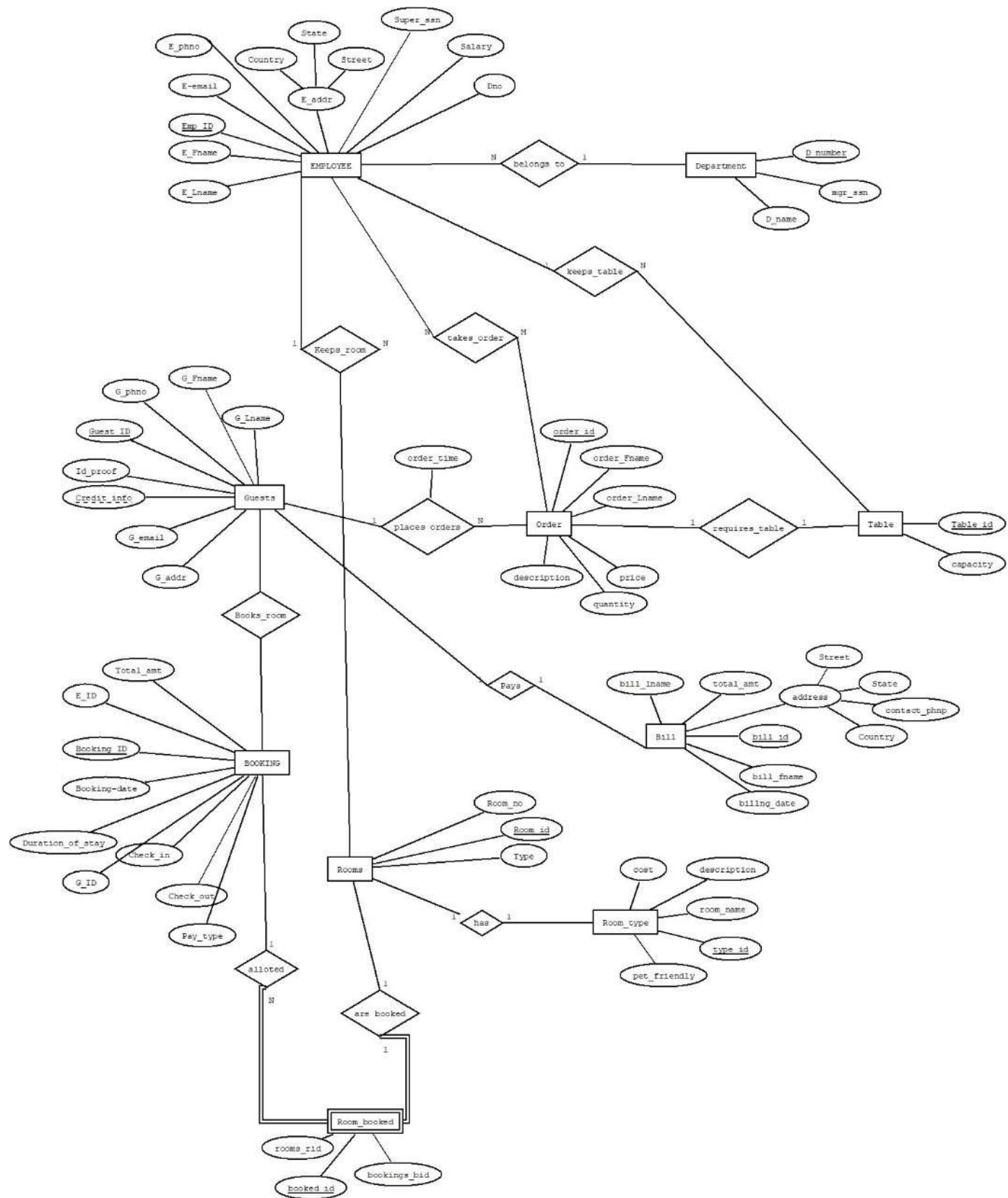
By referring to the above YouTube video, we downloaded Dia from the 1st link provided above. Once installed, it can be run from your windows machine through: **Start → All Programs → Dia → Dia.**

Steps to draw the ER diagram in Dia-:

Click on the **arrow** next to **Flowchart** in the left pane to get the list of available diagrams. Choose from the options: **Other Sheets → ER.** You will get the toolbox for ER components (entity, relationship, attribute, lines ...) shown on the left side. To start drawing, click on the icon of **Entity E** Then click inside the white drawing canvas and so on. Use the connecting line icon to connect entities to relationships. To change the cardinality of a line, double click on the line and choose the relevant options.



ER diagram using Dia :-



Contributions -:

- 1) B. Pravena – PES2UG19CS076 – Choosing the entity-attributes, relational design, report compilation.
- 2) Bharath Kumar S P-PES2UG19CS087 – ER diagram using Dia ER tool
- 3) Bhuvantej R – PES2UG19CS092 – ER diagram incremental and final hand-drawn version