



DBMS ASSIGNMENT – 1

UE19CS301

PROJECT TITLE: ONLINE MOVIE TICKET BOOKING MANAGEMENT SYSTEM

SEMESTER: 5

SECTION: B

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PROBLEM STATEMENT:

Online Movie Ticket Booking System is a SQL-based mini-project that paves way for the users to book movie tickets online either by selecting a theatre present in their desired region or by choosing movies of various languages. The users can book tickets for a screen running a particular show at any desired time, according to their convenience and on the basis of available number of seats.

The goal of this system is to give users round-the-clock service and facilitate them to book movie tickets online, in-order to avoid the hassle of standing in long queues. The system aims to provide extensive information regarding the movies available in multiple languages, the theatres present in a given region, the number of seats available in a given theatre and the ticket price of a particular seat to the users.

It has nine entities namely: User, Region, Theatre, Movies, Show, Screen, Booking, Ticket and Languages.

Entity	Attributes
USER	<u>User_ID*</u> , <u>email_ID%</u> , User_Name, Age
REGION	<u>Pincode</u> , Number of theatres, City
THEATRE	<u>Theatre_ID</u> , Number of screens, Theatre_Name
MOVIES	<u>Movie_ID</u> , Name, Release_date, Genre
SHOW	<u>Show_ID</u> , Show_date, Show_Time
BOOKING	<u>Booking_ID</u> , Number of tickets, Cost**
SCREEN	<u>Screen_ID</u> , Seats in each class#
TICKET	<u>Ticket_ID</u> , Class#, Price**
LANGUAGE^	<u>Language_ID</u> , Language_Name

CONSTRAINTS:

*: Underlined values are the primary keys.

** : Cost, Price - derived attributes.

^: Language is a weak entity and Language_ID is a partial key

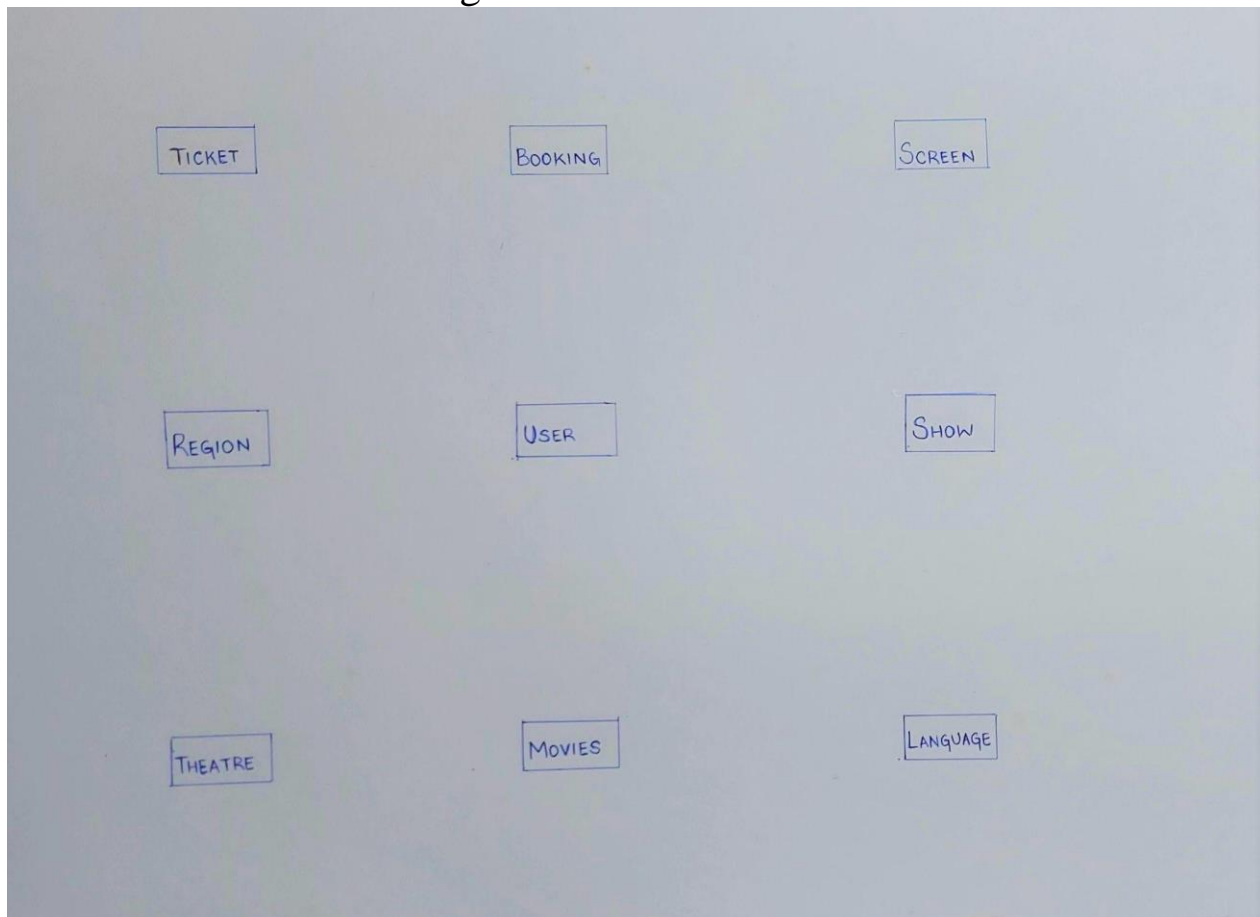
#: Class, Seats in each class - composite attributes.

%: email_ID is the unique or candidate key.

In the *Makes* relationship, between user and booking, the Payment attribute is a composite value.

STAGES OF THE ER DIAGRAM:

For creating the ER diagram for the Online Movie booking management system we started out by naming all of the possible entities which exist in the database management system which included Tickets, Show, Movies, Region, Theatre, User, Booking, Screen, and Language. This can be seen in the diagram drawn below.



Next, we decided the attributes of each of the entities in the diagram.

1) The entity **Ticket** consists of the Ticket ID which is the primary key as it is unique, Price of the ticket is a derived attribute as it can vary according to the booking made by the user, Class of the ticket chosen can be Economy, Premium or VIP thus making it a composite attribute.

2) **Booking** entity consists of the unique primary key Booking ID, Number of tickets booked, and the varying cost of the booking made which is a derived attribute.

3) The entity **Screen** consists of the Seats in each class present and, the exclusive Screen ID chosen as the primary key.

4) **Region** entity contains the City it's present in, Pincode of the region, and Number of theatres in that region. Since pin codes are exclusive of each other it was selected as the primary key.

5) **User** entity consists of the Age, user name, email ID, and User ID of the user making a booking. As an online booking system allows only one account to be created per email ID submitted and the User ID is considered to be primary key and the email ID is the unique key.

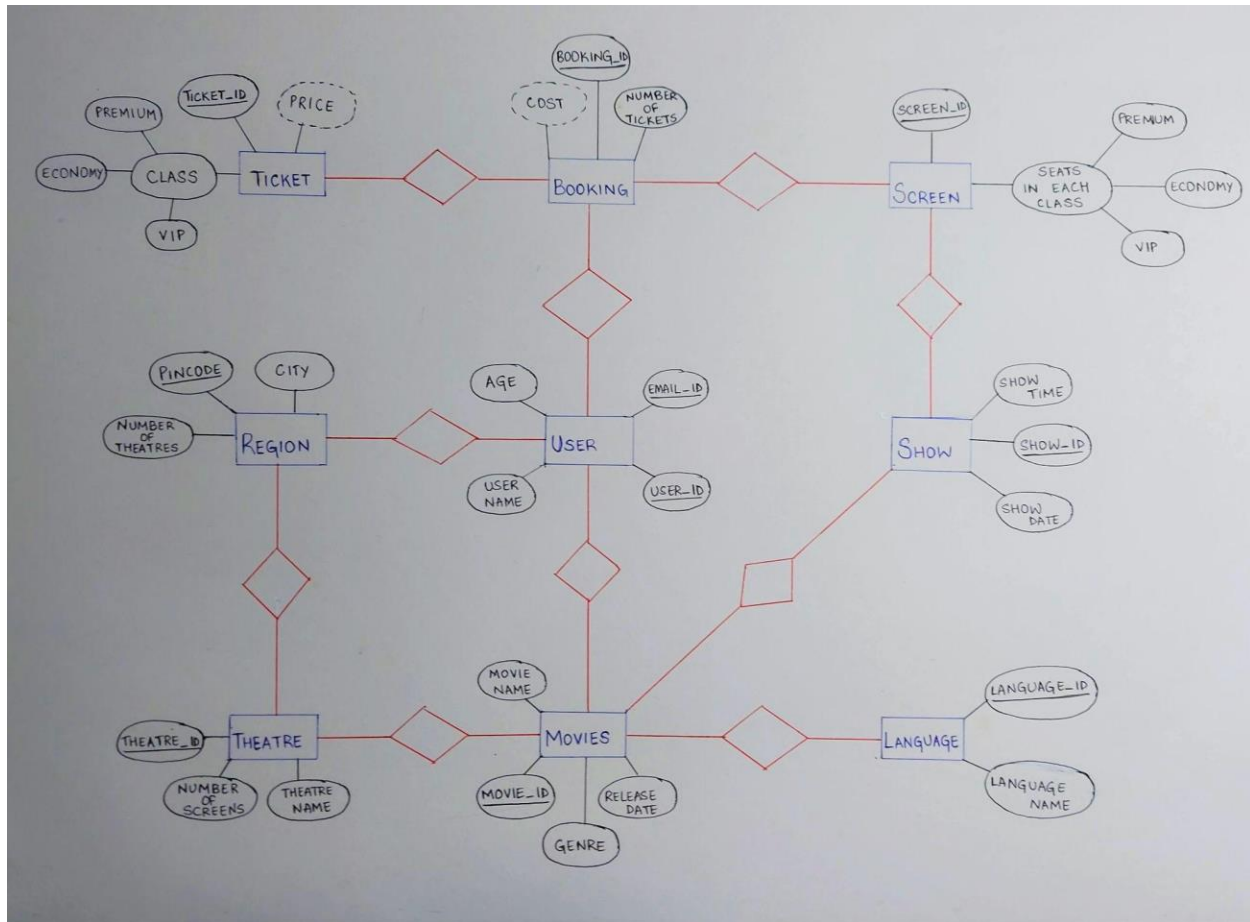
6) **Show** entity includes the time and date of the show presented, and the Show ID (*primary key*) of the show.

7) **Theatre** entity comprises the Name of the theatre, Number of screens in the theatre, and the unique Theatre ID provided.

8) **Movies** entity consists of the Genre of the movie, Movie name, Release date, and the sole Movie ID of the movie shown in the theatre.

9) The entity **Language** consists of the Language name and the Language ID (*primary key*).

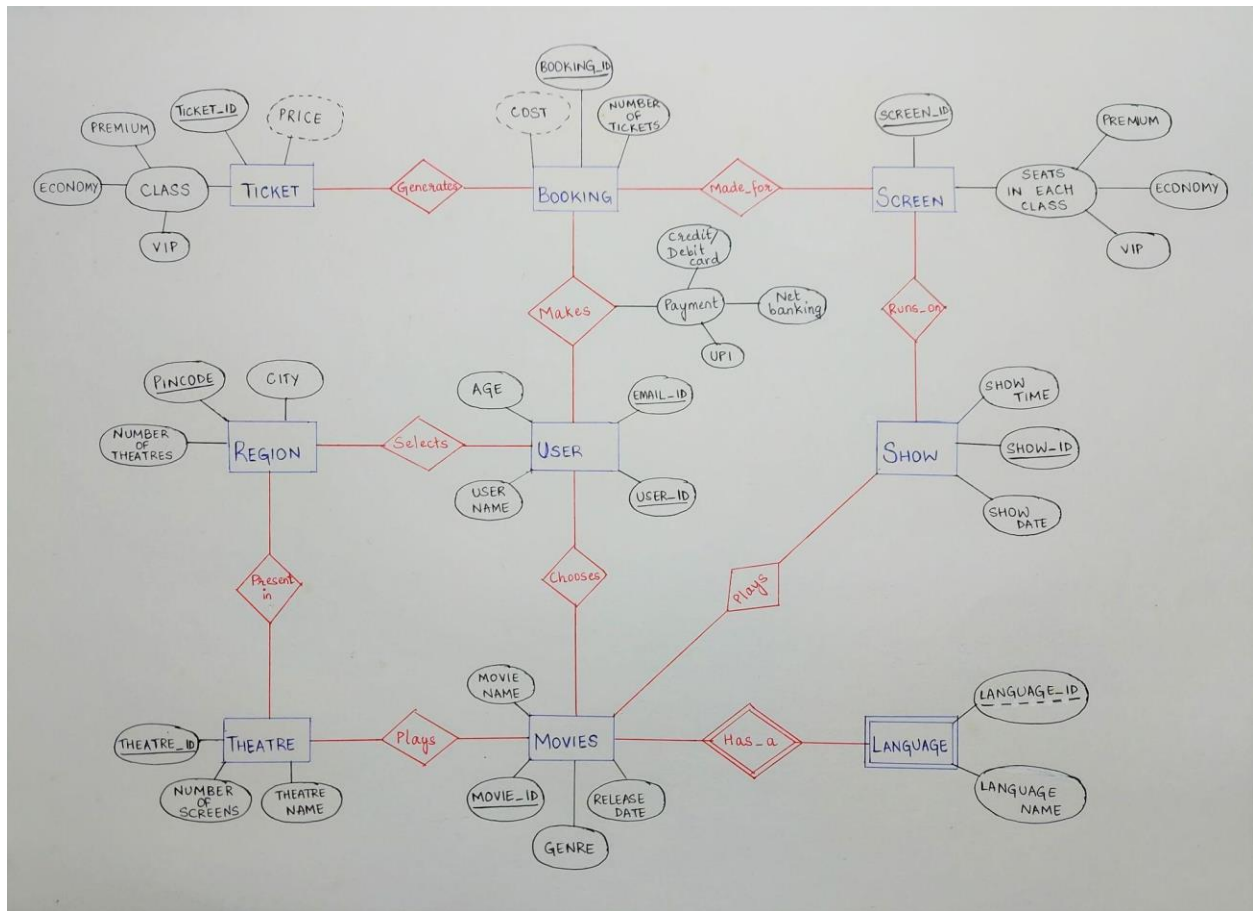
This has been shown below.



Next we connected the various entities with each other by creating relationships with each other.

- Tickets are *generated* during the booking.
- Bookings are *made for* viewing on the screens.
- A theatre is *present* in a given region.
- A particular user *makes* a booking.
- A screen *runs* shows in a theatre.
- Shows *play* movies.
- A movie *has* languages.
- A user *selects* a region to watch a movie in.
- A user *chooses* a movie to watch.
- A Theatre *plays* many movies.

Language entity was made a weak entity and Language_ID was made a partial key. This has been shown below.



Lastly, the cardinality of the relationships was decided,

- A minimum of one booking is one to generate a minimum of one ticket while M bookings can be done to generate N tickets.
- A user can select a maximum of one region at a given time.
- A particular theatre can be present in only one region.
- A theatre can choose not to play a particular movie or multiple movies.
- Movies can be shown in multiple languages (dub) but a movie might not be dubbed in a particular language.
- A user can choose either one or multiple movies to watch in the theatre.
- Every movie can be shown multiple times or may not be shown at all.
- A Screen might not run a specific show or can run many shows.

- Users may make multiple bookings or no bookings at all.
- A booking can be made for either one or numerous screens.
- Payment is a composite attribute for the relationship *Makes* consisting of the attributes of Credit card, Debit Card and UPI.

The appropriate participation symbols for the relationships were decided.

Legend:

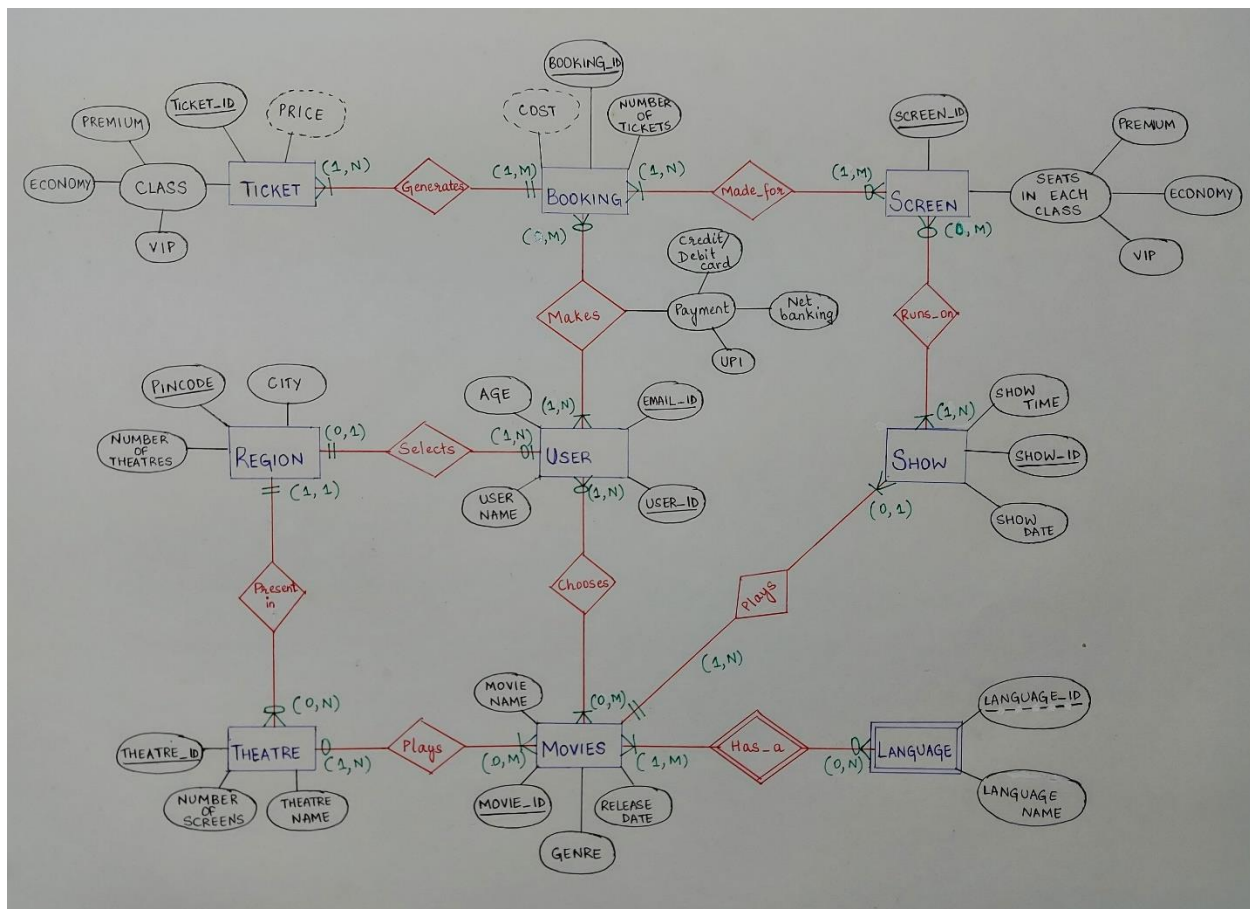
Mandatory Many - $\rightarrow|$

Mandatory One - \parallel

Optional Many - $\rightarrow 0$

Optional One - $0|$

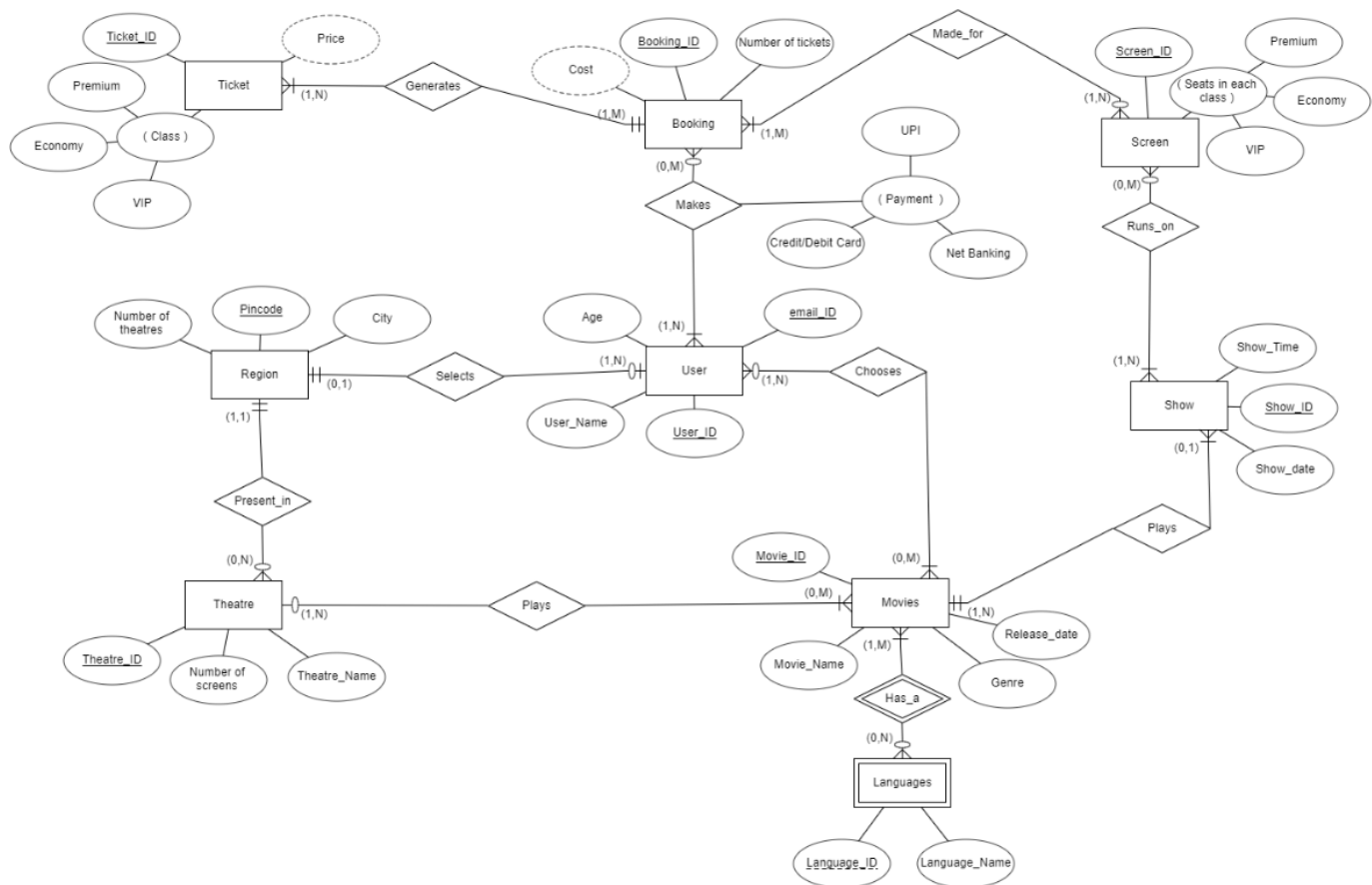
Optional Unspecified - 0



ER TOOL USED:

ERD Plus is a cross-platform database modeling tool for creating Entity-Relationship diagrams, Relationship schemas, Star schemas, and SQL DDL statements. ERD Plus makes database visualization effortless and accessible to everyone. The diagram can be built using various shapes and connecting lines, the generated SQL can be exported. With the availability of an abundance of features, data modeling can be done with ease. Free accounts offer the user the ability to save documents onsite and have options to easily share documents with others which makes it convenient for students.

FINAL ER DIAGRAM:



Please use this link to view the screenshots in a higher resolution

<https://drive.google.com/drive/folders/11axATk3Z2R4wNGOG7nXJDa5ocEHn0g8O?usp=sharing>

CONTRIBUTIONS:

Apoorva BS	PES1UG19CS080	ER diagram drawn by hand
Ankita V	PES1UG19CS068	ER Tool used, Stages of the diagram
Anvika D Shriyan	PES1UG19CS079	Problem Statement
<u>DONE BY ALL:</u> Online ER Diagram using ERDPlus, Cardinality		