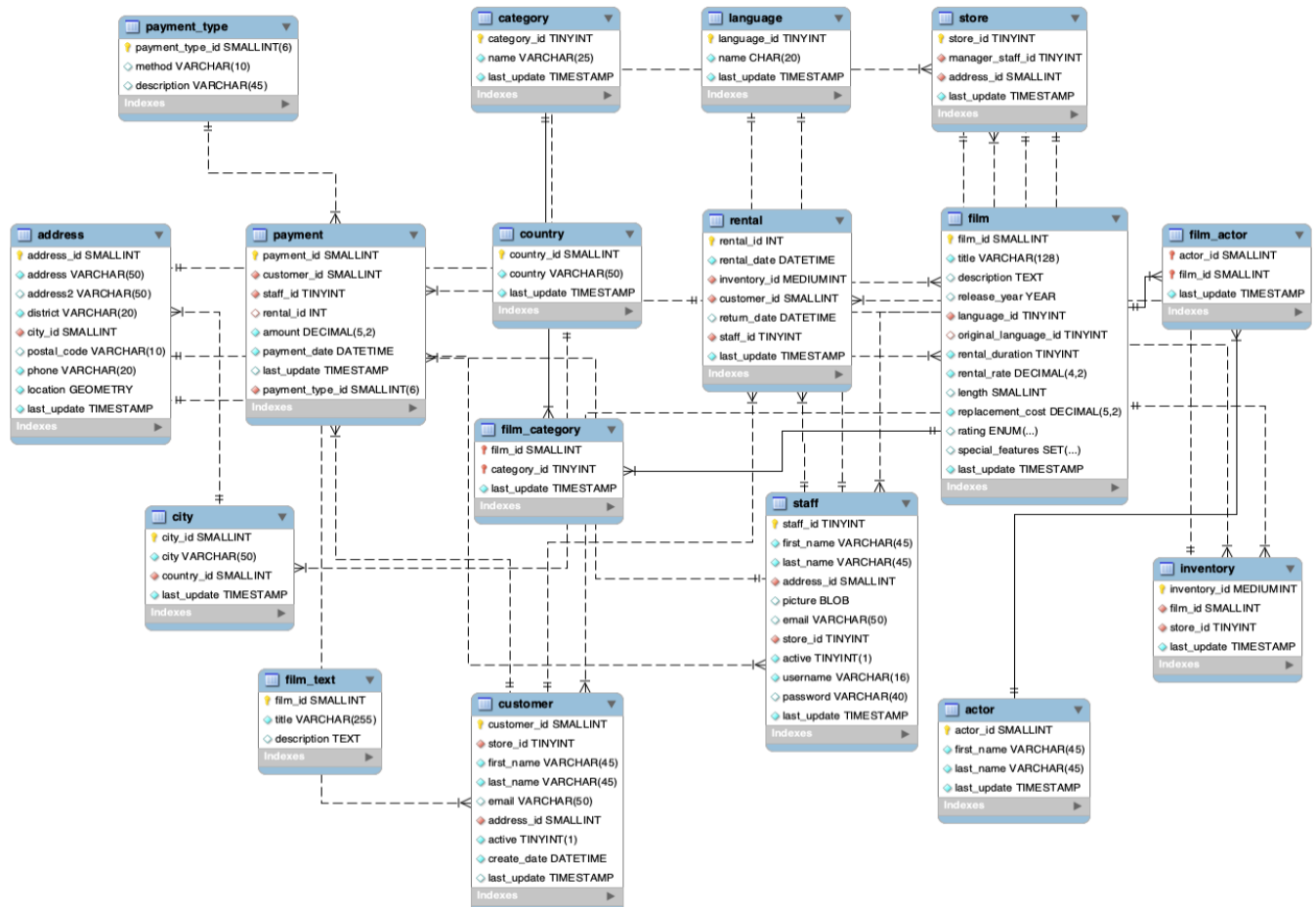


## PART 1: Relational Modelling

Updated EER model for Sakila schema with payment\_type table :



**Table Name:** Payment – form template

Field (Attributes)	Primary Key (Y/N)	Foreign Key (Y/N)	Related Table(s) and Cardinality between tables
payment_id	Y	N	
customer_id	N	Y	<b>customer</b> table has one to many relationship with the <b>payment</b> table

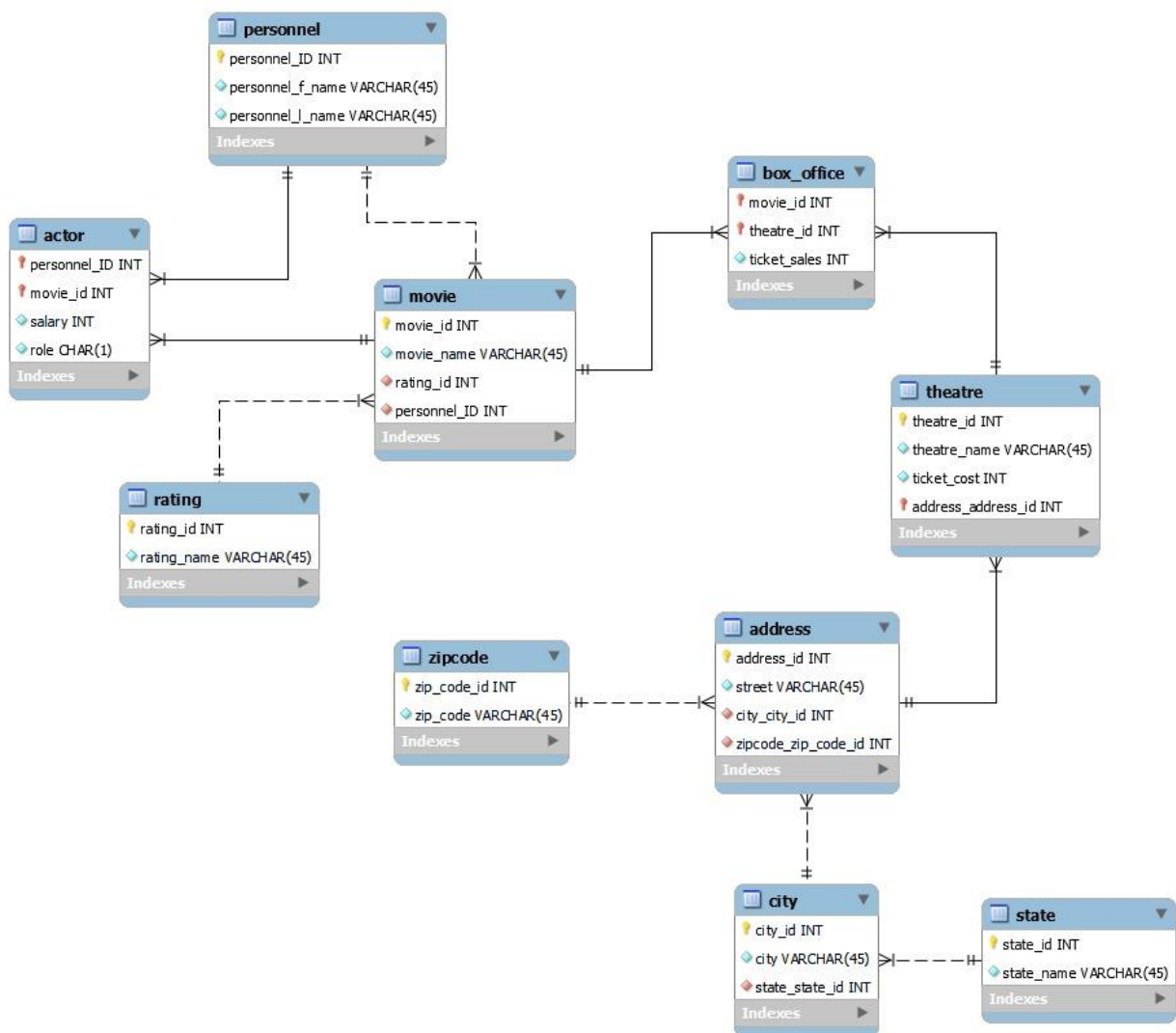
<b>staff_id</b>	N	Y	<b>staff</b> table has one to many relationship with the <b>payment</b> table
<b>rental_id</b>	N	Y	<b>rental</b> table has one to many relationship with the <b>payment</b> table
<b>payment_type_id</b>	N	Y	<b>payment_type</b> table has one to many relationship with the <b>payment</b> table
<b>amount</b>	N	N	
<b>payment_date</b>	N	N	
<b>last_update</b>	N	N	

## PART 2: Normalization

Refer *Assignment2\_Part2\_Solution.xlsx*

## PART 3: Data Modelling

Data model for movie production studio (created using MySQLWorkbench) :



## PART 4: Design Document:

- Database type : Relational Database
- Type of users :
  1. Producers
  2. Actors
  3. Booking Agent
  4. Theatre Managers
  5. IT team

- **Number of users :** Since this is a movie studio production database the number of users would be approximately 250 to 400 users for a local production studio
- **Need for distributed databases :** Since a distributed database is one where data is stored across multiple physical locations, it would make more sense to have a distributed database if this was a global movie production studio. In case you are making it for a small local production studio, we would not need a distributed system
- **Data security considerations :**
  1. Producers would be given read to the Box-office table because he would want to know how his movie is performing and read/write access to the Rating, Movie, Actor and Personnel data as he decides the cast, rating and the salary for actors
  2. Theatre Managers would be given read access to the Theatre, Movie, Rating and Box-office and read/write access to the Theatre table as he can control ticket prices and he would need to know what the rating of the movie is
  3. Actors and Booking agents will only be given read access to the personnel, Movie and Actor data as they would only need to know which movies they are cast in, their role and their salary
  4. IT team manage the database so they would have access to run all DDL and DML operations on all the tables

- **Data privacy considerations :**

Yes, the table contains sensitive information like actor salary what only the actor, his agent and the producer should be able to access. Similarly, the actor or his agent do not need to know the ticket prices of theatres and how many tickets are sold as that information is sensitive and for the eyes of the producer and theatre managers only

- **Data integrity considerations :**

Data integrity is maintained as we have ensured data security and privacy by giving controlled access and permissions. This will make sure we avoid inconsistencies in the data. The database is normalised in order to prevent insertion, deletion and modification anomalies. The database is maintained by the IT team who will ensure that the data integrity is maintained from time to time