UE19CS301 – DBMS Assignment 2

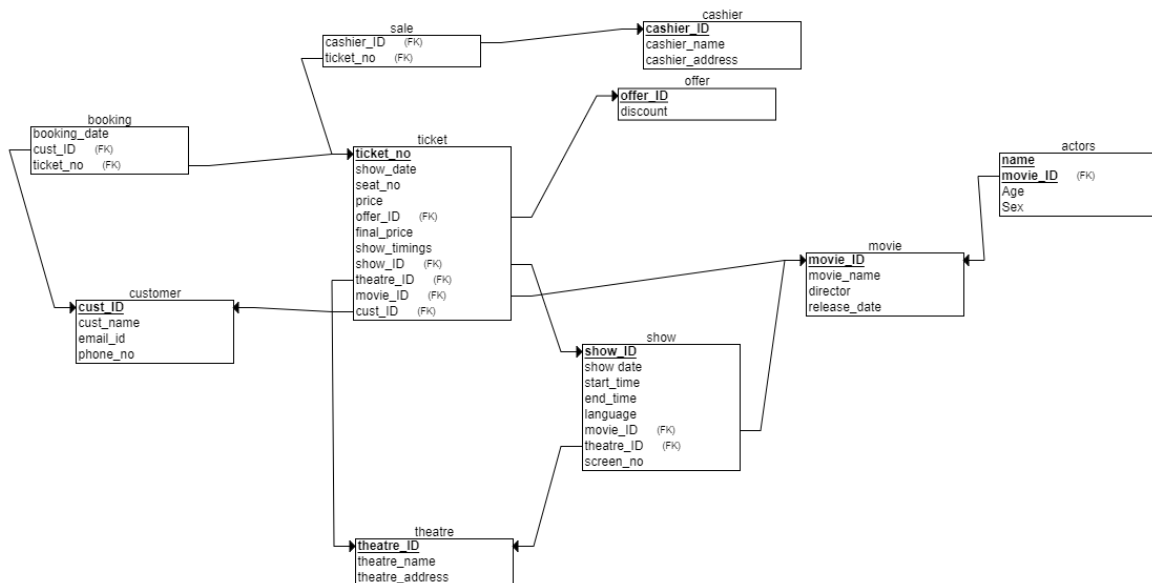| B R Pratheek	Arvind Krishna	Anurag Khanra
PES1UG19CS101	PES1UG19CS090	PES1UG19CS072

Ticket Booking System

Why we chose SQL as our DBMS:

- Data is simple and can be stored in tabular format.
- We have a rigid schema which suits the use case of RDBMS.
- Since we are enforcing some foreign key constraints on data, it is better to do it on an RDBMS.
- Also, authentication is better handled in SQL.
- There is a good balance between durability and performance which suits our requirement.

To handle our RDBMS requirements, we have chosen PostgreSQL as implementation. Given below is the finalised Relational Schema which was used to create and populate our database.

Create Statements .sql file:

Following is the implementation of the given Relational Schema with the help of create statements

```sql
drop database tbs_assignment;
create database tbs_assignment;

\c tbs_assignment

-- Any form of ID, please enter in an 6 digit AlphaNumeric format Eg: AHF658

CREATE TABLE cashier
(
  cashier_ID VARCHAR(6) NOT NULL,
  cashier_name VARCHAR(30) NOT NULL,
  cashier_address VARCHAR(50) NOT NULL,
  PRIMARY KEY (cashier_ID)
);

CREATE TABLE theatre
(
  theatre_ID VARCHAR(6) NOT NULL,
  theatre_name VARCHAR(25) NOT NULL,
  theatre_address VARCHAR(50) NOT NULL,
  PRIMARY KEY (theatre_ID)
);

CREATE TABLE customer
(
  cust_name VARCHAR(15) NOT NULL,
  cust_ID VARCHAR(6) NOT NULL,
  email_id VARCHAR(50) NOT NULL,
  phone_no VARCHAR(10) NOT NULL,
  PRIMARY KEY (cust_ID)
);

CREATE TABLE movie
(
  movie_ID VARCHAR(6) NOT NULL,
  movie_name VARCHAR(50) NOT NULL,
  director VARCHAR(25) NOT NULL,
  release_date VARCHAR(10) NOT NULL,
  PRIMARY KEY (movie_ID)
);

CREATE TABLE actors
(
  Actor_name VARCHAR(30) NOT NULL,
```

```sql
    Age INT NOT NULL,
    Sex CHAR(1) NOT NULL,
    movie_ID VARCHAR(6) NOT NULL,
    PRIMARY KEY (Actor_name, movie_ID),
    FOREIGN KEY (movie_ID) REFERENCES movie(movie_ID)
);

CREATE TABLE offer
(
    offer_ID VARCHAR(6) NOT NULL,
    discount INT NOT NULL,
    PRIMARY KEY (offer_ID)
);

CREATE TABLE shows
(
    start_time VARCHAR(5) NOT NULL,
    end_time VARCHAR(5) NOT NULL,
    show_ID VARCHAR(6) NOT NULL,
    language INT NOT NULL,
    screen_no INT NOT NULL,
    show_date varchar(10) NOT NULL,
    movie_ID VARCHAR(6) NOT NULL,
    theatre_ID VARCHAR(6) NOT NULL,
    PRIMARY KEY (show_ID),
    FOREIGN KEY (movie_ID) REFERENCES movie(movie_ID),
    FOREIGN KEY (theatre_ID) REFERENCES theatre(theatre_ID)
);

CREATE TABLE ticket
(
    ticket_no VARCHAR(6) NOT NULL,
    seat_no INT NOT NULL,
    price INT NOT NULL,
    offer_ID VARCHAR(6) NOT NULL,
    final_price INT NOT NULL,
    show_ID VARCHAR(6) NOT NULL,
    cust_ID VARCHAR(6) NOT NULL,
    PRIMARY KEY (ticket_no),
    FOREIGN KEY (show_ID) REFERENCES shows(show_ID),
    FOREIGN KEY (cust_ID) REFERENCES customer(cust_ID),
    FOREIGN KEY (offer_ID) REFERENCES offer(offer_ID)
);

CREATE TABLE sale
(
    cashier_ID VARCHAR(6) NOT NULL,
    ticket_no VARCHAR(6) NOT NULL,
```

```sql
    FOREIGN KEY (cashier_ID) REFERENCES cashier(cashier_ID),
    FOREIGN KEY (ticket_no) REFERENCES ticket(ticket_no),
    PRIMARY KEY (cashier_ID, ticket_no)
);

CREATE TABLE booking
(
    booking_date VARCHAR(10) NOT NULL,
    cust_ID VARCHAR(6) NOT NULL,
    ticket_no VARCHAR(6) NOT NULL,
    FOREIGN KEY (cust_ID) REFERENCES customer(cust_ID),
    FOREIGN KEY (ticket_no) REFERENCES ticket(ticket_no),
    PRIMARY KEY (cust_ID, ticket_no)
);
```

Insert Statements .sql file:

The following is the insert statements which is used to populate our database for further application.

```sql
\c tbs_assignment
-- INSERTING CASHIER
INSERT into cashier values ('A7VGBD','John', '4th Cross, Banashankari');
INSERT into cashier values ('JBAGD3','Brown', 'Banglore towers, RR Nagar');
INSERT into cashier values ('8HNFGB','Steve', 'No 169, Majestic');
INSERT into cashier values ('6HDIA','Harvey', '450 Stone, Satelitte town');
INSERT into cashier values ('ABJD82','Richard', '390 Block, Yelahanka');
INSERT into cashier values ('AJNF5Y','Nelson', '7th main, JP nagar');

--Inserting threatres

INSERT into theatre values ('A7VGBD','Banglore cinemas', 'Banglore Cinemas,
Banglore');
INSERT into theatre values ('AHSA8A','Central Movies', 'City Cetral Mall,
Banglore');
INSERT into theatre values ('8UHD7A','Fun Zone', 'Jayanagar, 4th cross');

--inserting customer values
INSERT into customer values ('Alex','HNFOSA', 'alex@mymail.com',7267875614);
INSERT into customer values ('Lucius','DUJD87', 'lkurten0@studiopress.com',
9598072503);
INSERT into customer values ('Grigs','KIFH76', 'rgrigs1@statcounter.com',
1789448756);
INSERT into customer values ('Mennear','DUNS87', 'gmennear2@lulu.com',
9009039174);
INSERT into customer values ('Recke','OFKDU7', '    brecke3@fema.gov',
9036281877);
INSERT into customer values ('Merrill','OJDUJ8', 'gmerrill4@mac.com', 5416709934);
```

```sql
INSERT into customer values ('Lehrian','IHDY79', 'slehrian5@amazon.co.uk',
4473498204);
INSERT into customer values ('Alton','OJJYD6', '    jalton6@scribd.com',
6222544526);
INSERT into customer values ('Munford','IJD7UJ', 'amunford7@nature.com',
4153357078);
INSERT into customer values ('Dowson','HDUKS8', 'bdowson8@howstuffworks.com',
3516401471);

--MOVIES
INSERT into movie values('UGNSJ7','Fame','Lemerle','8/23/2021');
INSERT into movie values('GSDAI6','Copying Beethoven','Jozefowicz','7/19/2021');
INSERT into movie values('HD7JSK','Gashte ershad','Abrahmer','6/8/2021');
INSERT into movie values('SADHGI','Do You Wanna Know a
Secret?','Klampt','9/16/2021');
INSERT into movie values('SAH7YK','Flicker','Beggi','7/24/2021');
INSERT into movie values('SUDG7J','How to Meet Girls from a
Distance','Gentner','10/14/2021');
INSERT into movie values('H7S9KJ','Horrible Dr. Hichcock,
The','OBrogane','12/19/2020');
INSERT into movie values('HSA8H2','Operation Mad Ball','Bellelli','11/17/2020');
INSERT into movie values('HSAUH7','Nô','Gaukroger','2/26/2021');
INSERT into movie values('HSA8H5','Silentium','Hadlington','8/8/2021');

--actors
Insert into actors values( 'McClymont',55,'F', 'HSA8H5');
Insert into actors values('Kitney',99,'F', 'HSAUH7');
Insert into actors values('Bradford',60,'F', 'HSAUH7');
Insert into actors values('Richardson',100,'M','H7S9KJ');
Insert into actors values('Handslip',69,'M','SAH7YK');
Insert into actors values('Dizlie',60,'F','SAH7YK');
Insert into actors values('Renfrew',41,'M','SADHGI');
Insert into actors values('Frankton',33,'M', 'SADHGI');
Insert into actors values('Pavlov',21,'F','UGNSJ7');
Insert into actors values('Beetham',89,'F', 'UGNSJ7');

INSERT into offer values('HDSAIJ' , 20);
INSERT into offer values('9HSDAU' , 10);
INSERT into offer values('AD8JGA' , 24);
INSERT into offer values('AS98HS' , 50);
INSERT into offer values('AS7TGH' , 40);

INSERT into shows values('05:30', '08:00', 'IHSH76', 1, 3, '02/12/2020', 'SAH7YK',
'8UHD7A');

INSERT into shows values('11:30', '13:00', 'GJ8H6G', 3, 1, '31/09/2021', 'UGNSJ7',
'A7VGBD');
```

```sql
INSERT into shows values('06:30', '08:45', 'OHJKU8', 5, 2, '12/10/2020', 'SUDG7J',
'A7VGBD');
INSERT into shows values('18:30', '22:15', 'IAJD8H', 2, 3, '05/06/2021', 'H7S9KJ',
'AHSA8A');
INSERT into shows values('13:45', '16:40', 'JS9U7H', 1, 6, '15/01/2020', 'SADHGI',
'8UHD7A');
INSERT into shows values('09:15', '11:00', 'JSAIDH', 1, 4, '18/03/2020', 'HSA8H5',
'A7VGBD');
INSERT into shows values('10:50', '13:00', 'KSIAUJ', 2, 3, '06/05/2020', 'SUDG7J',
'8UHD7A');
INSERT into shows values('23:30', '02:00', '9IJSAK', 5, 2, '18/12/2020', 'HSA8H2',
'AHSA8A');
INSERT into shows values('07:05', '09:00', 'A0SJ8S', 3, 1, '22/05/2020', 'HSA8H2',
'AHSA8A');
INSERT into shows values('15:20', '18:00', 'ASJ8JA', 4, 4, '01/11/2020', 'SAH7YK',
'A7VGBD');

INSERT into ticket VALUES('YHSA8H', 12, 250, 'AD8JGA', 190, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('HDJSAY', 63, 200, 'HDSAIJ', 160, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('YAASUQ', 57, 350, '9HSDAU', 315, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('AISH61', 52, 400, 'AS98HS', 200, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('ASIDH1', 26, 150, 'AD8JGA', 190, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('SID87H', 85, 200, 'HDSAIJ', 160, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('Y8UED7', 50, 250, '9HSDAU', 225, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('SADJ61', 42, 200, 'HDSAIJ', 160, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('ASIU7H', 26, 285, 'AD8JGA', 190, 'KSIAUJ', 'OFKDU7');
INSERT into ticket VALUES('AS8753', 54, 132, 'AS98HS', 76, 'KSIAUJ', 'OFKDU7');


INSERT INTO sale values('8HNFGB', 'AS8753');
INSERT INTO sale values('8HNFGB', 'ASIDH1');
INSERT INTO sale values('8HNFGB', 'SADJ61');
INSERT INTO sale values('8HNFGB', 'YHSA8H');
INSERT INTO sale values('8HNFGB', 'AISH61');
INSERT INTO sale values('8HNFGB', 'ASIU7H');
INSERT INTO sale values('8HNFGB', 'Y8UED7');
INSERT INTO sale values('8HNFGB', 'YAASUQ');
INSERT INTO sale values('8HNFGB', 'HDJSAY');

INSERT into booking values('02/03/2021','HDUKS8', 'AS8753');
INSERT into booking values('21/07/2020','HNFOSA', 'ASIDH1');
INSERT into booking values('27/10/2020','DUJD87', 'SADJ61');
INSERT into booking values('23/01/2021','KIFH76', 'YHSA8H');
INSERT into booking values('19/10/2021','OFKDU7', 'AISH61');
INSERT into booking values('08/05/2020','OJDUJ8', 'ASIU7H');
INSERT into booking values('15/03/2021','IHDY79', 'Y8UED7');
INSERT into booking values('09/08/2020','OJJYD6', 'YAASUQ');
INSERT into booking values('03/04/2021','IJD7UJ', 'HDJSAY');
INSERT into booking values('20/02/2021','DUNS87', 'SID87H');
```

Work Distribution:

For this assignment our team distributed the work evenly where each member completed one task:

1. Pratheek Ravi – Worked on by continuing over from the previous assignment and converted the ER Diagram into Relational Schema.
2. Anurag Khanra – Wrote the script for the Create statements using the provided Schema and implements the relational constraints.
3. Arvind Krishna – Wrote the script for all the insert statements as provided above, following all the constraints and relations.

GitHub link for this assignment which included both create and insert .sql scripts: UE19CS301-DBMSAssignments

Given below is the original Relational Schema converted directly from the ER diagram, which was then reviewed by our team and corrected by removing redundant relations. The finalized Schema is provided at the start of the report.