A Report

On the work done during 3rd semester subject

Database Management System

of

B.Tech. Computer Engineering

Cricket Ticket Management System

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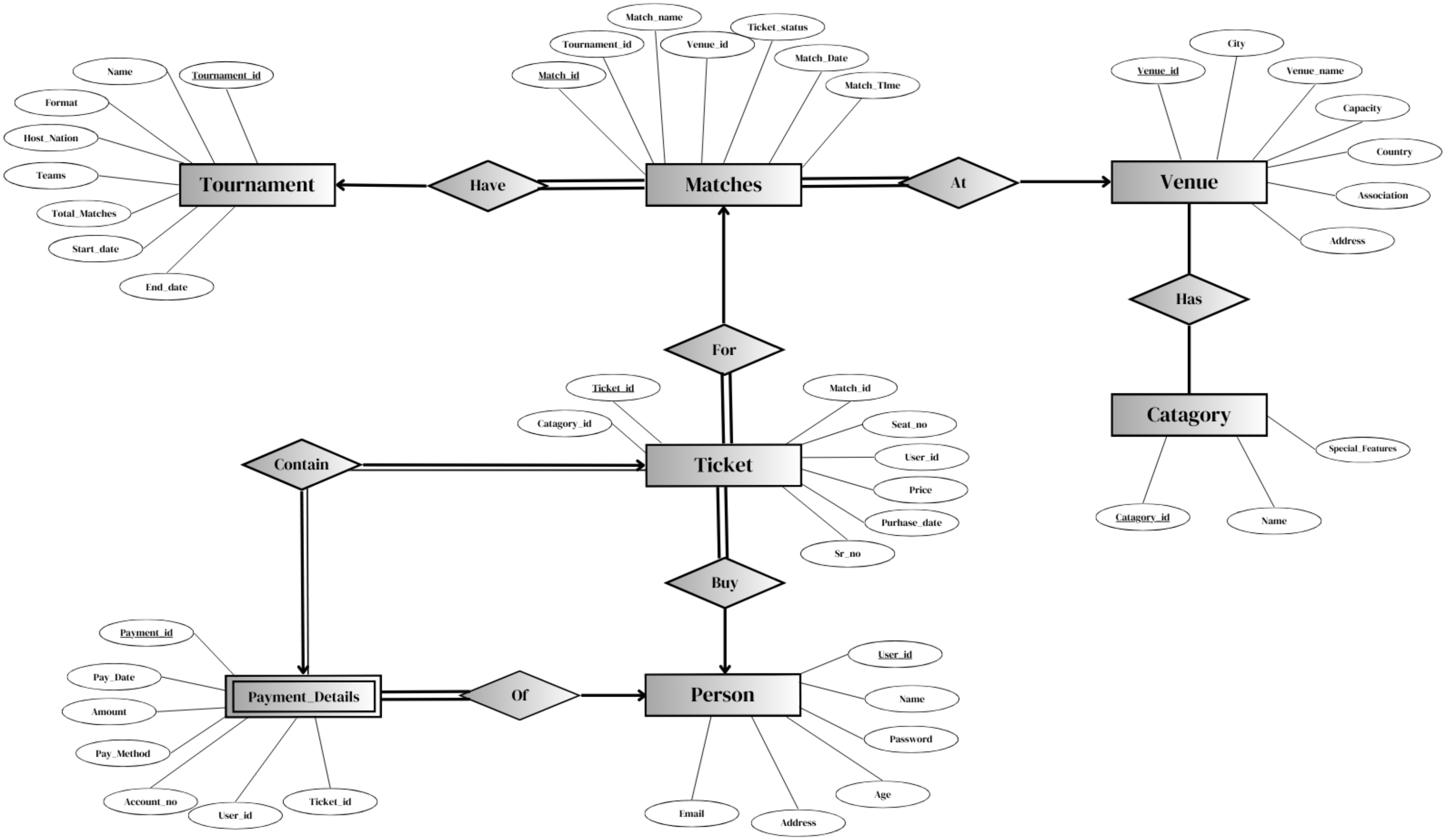
Brief Information about the system

- The Cricket Ticket Management System is for efficiently handling the entire ticketing process for various events and venues.

- This Ticket Management System simplifies the ticketing process, making it easier for cricket boards to sell tickets, for audiences to purchase and manage tickets, and for venues to ensure a smooth entry process.

- It offers user-friendly booking interfaces, secure payment processing, and digital tickets.

ER Diagram


Tournament
Name
Tournament_id
Format
Host_Nation
Teams
Total_Matches
Start_date
End_date
Have
Matches
Match_id
Tournament_id
Match_name
Venue_id
Ticket_status
Match_Date
Match_TIme
At
Venue
Venue_id
City
Venue_name
Capacity
Country
Association
Address
Has
Catagory
Catagory_id
Name
Special_Features
For
Ticket
Ticket_id
Catagory_id
Match_id
Seat_no
User_id
Price
Purhase_date
Sr_no
Contain
Buy
Payment_Details
Payment_id
Pay_Date
Amount
Pay_Method
Account_no
User_id
Ticket_id
Of
Person
User_id
Name
Password
Age
Address
Email

Schema

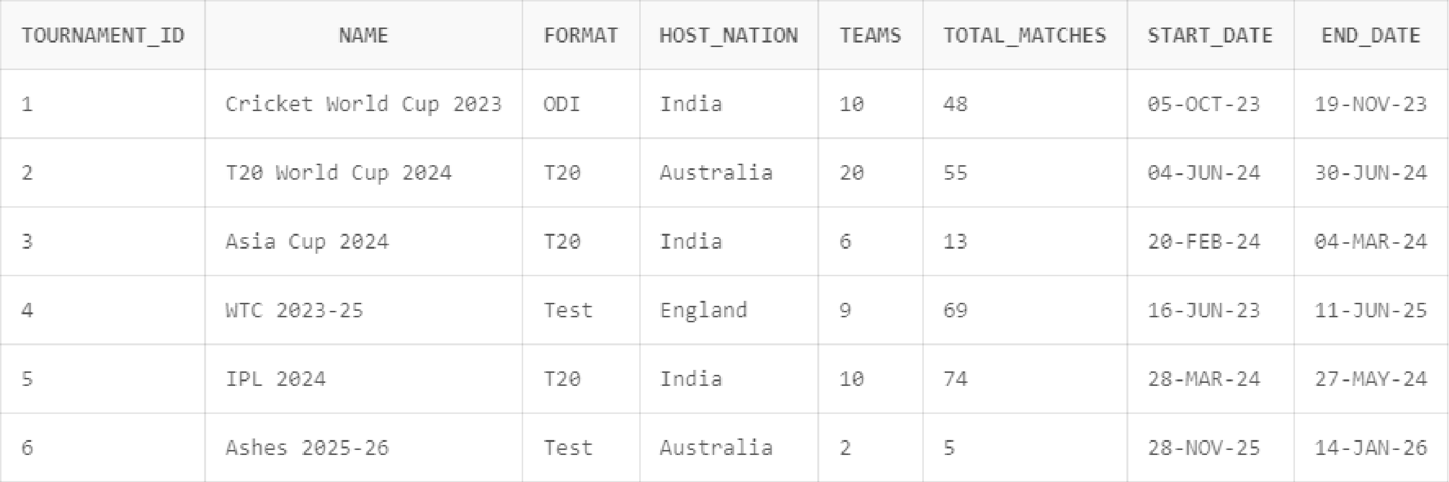
- **Tournament**(Tournament_id, Name, Format, Host_nation, Teams, Total_matches, Start_date, End_date)
- **Venue**(Venue_id, Venue_name, City, Country, Capacity, Association, Address)
- **Matches**(Match_id, Match_name, Tournament_id, Venue_id, Ticket_status, Match_date, Match_time)
- **Category**(Category_id, Name, Special_feature)
- **Person**(User_id, Name, Password, Age, Address, Email)
- **Ticket**(Ticket_id, Match_id, Category_id, Seat_no, Price, User_id, Sr_no, Purchase_date)
- **Payment_Details**(Payment_id, User_id, Account_no, Amount, Pay_method, Pay_date, Ticket_id)

- **Has**(Category_id, Venue_id)

❖ Tournament

```
CREATE TABLE Tournament (
    Tournament_id INT PRIMARY KEY,
    Name VARCHAR(50) NOT NULL,
    Format VARCHAR(50),
    Host_nation VARCHAR(50),
    Teams INT NOT NULL,
    Total_matches INT NOT NULL,
    Start_date DATE,
    End_date DATE
);
```

```
INSERT INTO Tournament
 VALUES(1, 'Cricket World Cup 2023', 'ODI', 'India', 10, 48, '05-Oct-2023', '19-Nov-2023');
INSERT INTO Tournament
VALUES(2, 'T20 World Cup 2024', 'T20', 'Australia', 20, 55, '04-Jun-2024', '30-Jun-2024');
INSERT INTO Tournament
VALUES(3, 'Asia Cup 2024', 'T20', 'India', 6, 13, '20-Feb-2024', '04-Mar-2024');
INSERT INTO Tournament
VALUES(4, 'WTC 2023-25', 'Test', 'England', 9, 69, '16-Jun-2023', '11-Jun-2025');
INSERT INTO Tournament
VALUES(5, 'IPL 2024', 'T20', 'India', 10, 74, '28-Mar-2024', '27-May-2024');
INSERT INTO Tournament
 VALUES(6, 'Ashes 2025-26 ', 'Test', 'Australia', 2, 5, '28-Nov-2025', '14-Jan-2026');
```

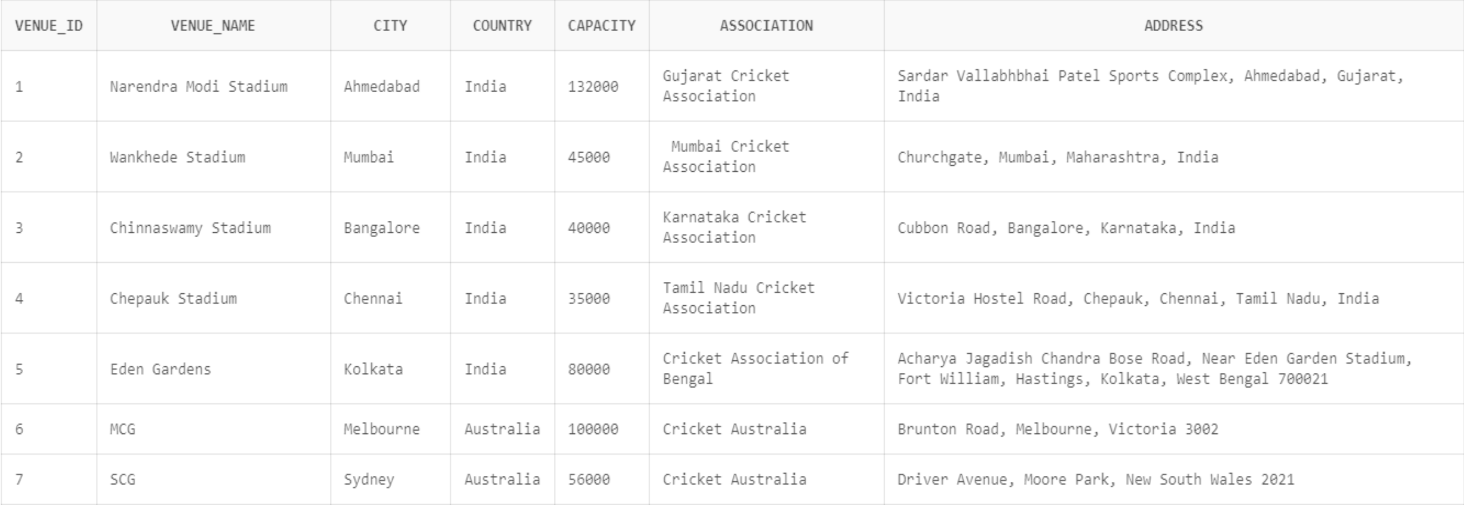


TOURNAMENT_ID	NAME	FORMAT	HOST_NATION	TEAMS	TOTAL_MATCHES	START_DATE	END_DATE
1	Cricket World Cup 2023	ODI	India	10	48	05-OCT-23	19-NOV-23
2	T20 World Cup 2024	T20	Australia	20	55	04-JUN-24	30-JUN-24
3	Asia Cup 2024	T20	India	6	13	20-FEB-24	04-MAR-24
4	WTC 2023-25	Test	England	9	69	16-JUN-23	11-JUN-25
5	IPL 2024	T20	India	10	74	28-MAR-24	27-MAY-24
6	Ashes 2025-26	Test	Australia	2	5	28-NOV-25	14-JAN-26

Venue

```
CREATE TABLE Venue (
   Venue_id INT PRIMARY KEY,
   Venue_name VARCHAR(100) NOT NULL,
   City VARCHAR(50) NOT NULL,
   Country VARCHAR(50),
   Capacity INT,
   Association VARCHAR(100),
   Address VARCHAR(255)
);
```

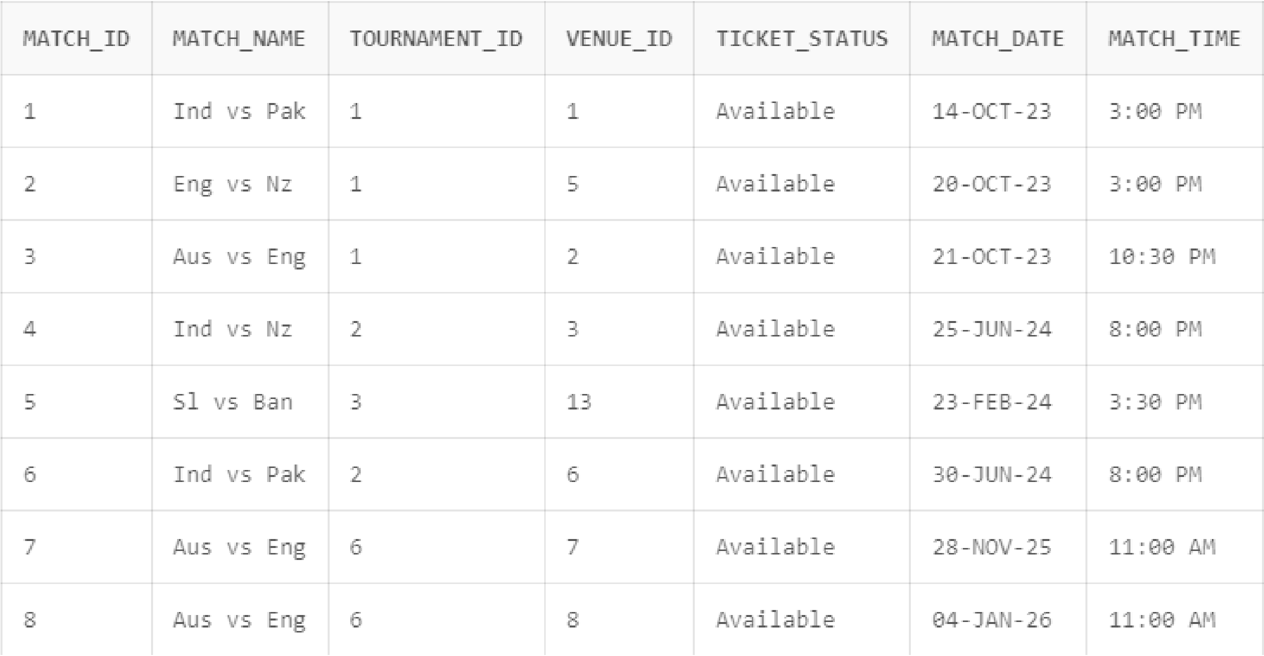
```
INSERT INTO Venue VALUES (1, 'Narendra Modi Stadium', 'Ahmedabad', 'India', 132000, 'Gujarat Cricket Association', 'Sardar Vallabhbhai Patel Sports Complex, Ahmedabad, Gujarat, India');

INSERT INTO Venue VALUES (2, 'Wankhede Stadium', 'Mumbai', 'India', 45000, ' Mumbai Cricket Association', 'Churchgate, Mumbai, Maharashtra, India');

INSERT INTO Venue VALUES (3, 'Chinnaswamy Stadium', 'Bangalore', 'India', 40000, 'Karnataka Cricket Association', 'Cubbon Road, Bangalore, Karnataka, India');

INSERT INTO Venue VALUES (4, 'Chepauk Stadium', 'Chennai', 'India', 35000, 'Tamil Nadu Cricket Association', 'Victoria Hostel Road, Chepauk, Chennai, Tamil Nadu, India');

INSERT INTO Venue VALUES (5, 'Eden Gardens', 'Kolkata', 'India', 80000, 'Cricket Association of Bengal', 'Acharya Jagadish Chandra Bose Road, Near Eden Garden Stadium, Fort William, Hastings, Kolkata, West Bengal 700021');

INSERT INTO Venue VALUES (6, 'MCG', 'Melbourne', 'Australia', 100000, 'Cricket Australia', 'Brunton Road, Melbourne, Victoria 3002');

INSERT INTO Venue VALUES (7, 'SCG', 'Sydney', 'Australia', 56000, 'Cricket Australia', 'Driver Avenue, Moore Park, New South Wales 2021');
```



VENUE_ID	VENUE_NAME	CITY	COUNTRY	CAPACITY	ASSOCIATION	ADDRESS
1	Narendra Modi Stadium	Ahmedabad	India	132000	Gujarat Cricket Association	Sardar Vallabhbhai Patel Sports Complex, Ahmedabad, Gujarat, India
2	Wankhede Stadium	Mumbai	India	45000	Mumbai Cricket Association	Churchgate, Mumbai, Maharashtra, India
3	Chinnaswamy Stadium	Bangalore	India	40000	Karnataka Cricket Association	Cubbon Road, Bangalore, Karnataka, India
4	Chepauk Stadium	Chennai	India	35000	Tamil Nadu Cricket Association	Victoria Hostel Road, Chepauk, Chennai, Tamil Nadu, India
5	Eden Gardens	Kolkata	India	80000	Cricket Association of Bengal	Acharya Jagadish Chandra Bose Road, Near Eden Garden Stadium, Fort William, Hastings, Kolkata, West Bengal 700021
6	MCG	Melbourne	Australia	100000	Cricket Australia	Brunton Road, Melbourne, Victoria 3002
7	SCG	Sydney	Australia	56000	Cricket Australia	Driver Avenue, Moore Park, New South Wales 2021

❖ Matches

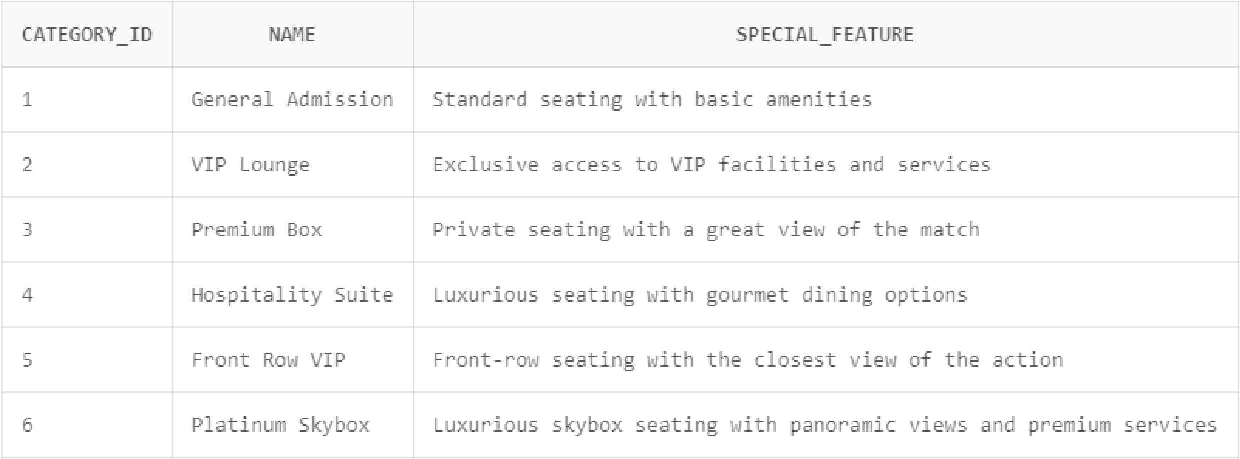
```
CREATE TABLE Matches (
   Match_id INT PRIMARY KEY,
   Match_name VARCHAR(255),
   Tournament_id INT,
   Venue_id INT,
   Ticket_status VARCHAR(50),
   Match_date DATE,
   Match_time VARCHAR(20),
   FOREIGN KEY (Tournament_id) REFERENCES Tournament(Tournament_id),
   FOREIGN KEY (Venue_id) REFERENCES Venue(Venue_id)
);


INSERT INTO Matches VALUES (1, 'Ind vs Pak', 1, 1, 'Available', '14-Oct-2023','3:00 PM');
INSERT INTO Matches VALUES(2, 'Eng vs Nz', 1, 5, 'Available', '20-Oct-2023','3:00 PM');
INSERT INTO Matches VALUES(3, 'Aus vs Eng', 1, 2, 'Available', '21-Oct-2023','10:30 PM');
INSERT INTO Matches VALUES(4, 'Ind vs Nz', 2, 3, 'Available', '25-Jun-2024','8:00 PM');
INSERT INTO Matches VALUES(5, 'Sl vs Ban', 3, 13, 'Available', '23-Feb-2024','3:30 PM');
INSERT INTO Matches VALUES(6, 'Ind vs Pak', 2, 6, 'Available', '30-Jun-2024','8:00 PM');
INSERT INTO Matches VALUES(7, 'Aus vs Eng', 6, 7, 'Available', '28-Nov-2025','11:00 AM');
INSERT INTO Matches VALUES(8, 'Aus vs Eng', 6, 8, 'Available', '04-Jan-2026','11:00 AM');
```



MATCH_ID	MATCH_NAME	TOURNAMENT_ID	VENUE_ID	TICKET_STATUS	MATCH_DATE	MATCH_TIME
1	Ind vs Pak	1	1	Available	14-OCT-23	3:00 PM
2	Eng vs Nz	1	5	Available	20-OCT-23	3:00 PM
3	Aus vs Eng	1	2	Available	21-OCT-23	10:30 PM
4	Ind vs Nz	2	3	Available	25-JUN-24	8:00 PM
5	Sl vs Ban	3	13	Available	23-FEB-24	3:30 PM
6	Ind vs Pak	2	6	Available	30-JUN-24	8:00 PM
7	Aus vs Eng	6	7	Available	28-NOV-25	11:00 AM
8	Aus vs Eng	6	8	Available	04-JAN-26	11:00 AM

❖ Category

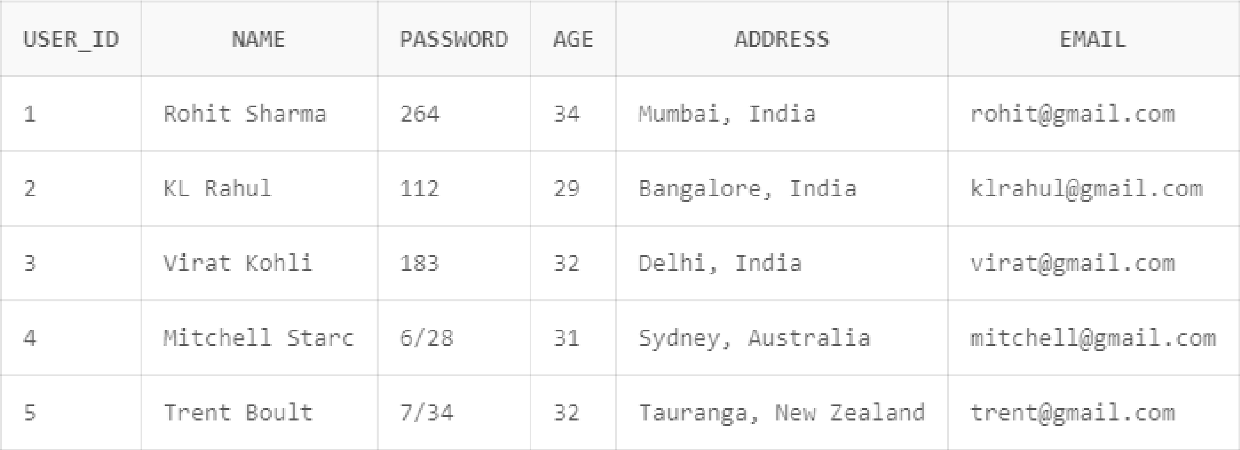
```
CREATE TABLE Category (
   Category_id INT PRIMARY KEY,
   Name VARCHAR(50) NOT NULL,
   Special_feature VARCHAR(255)
);


INSERT INTO Category VALUES (1, 'General Admission', 'Standard seating with basic amenities');
INSERT INTO Category VALUES (2, 'VIP Lounge', 'Exclusive access to VIP facilities and services');
INSERT INTO Category VALUES (3, 'Premium Box', 'Private seating with a great view of the match');
INSERT INTO Category VALUES (4, 'Hospitality Suite', 'Luxurious seating with gourmet dining options');
INSERT INTO Category VALUES (5, 'Front Row VIP', 'Front-row seating with the closest view of the action');
INSERT INTO Category VALUES (6, 'Platinum Skybox', 'Luxurious skybox seating with panoramic views and premium services');
```



CATEGORY_ID	NAME	SPECIAL_FEATURE
1	General Admission	Standard seating with basic amenities
2	VIP Lounge	Exclusive access to VIP facilities and services
3	Premium Box	Private seating with a great view of the match
4	Hospitality Suite	Luxurious seating with gourmet dining options
5	Front Row VIP	Front-row seating with the closest view of the action
6	Platinum Skybox	Luxurious skybox seating with panoramic views and premium services

❖ Person

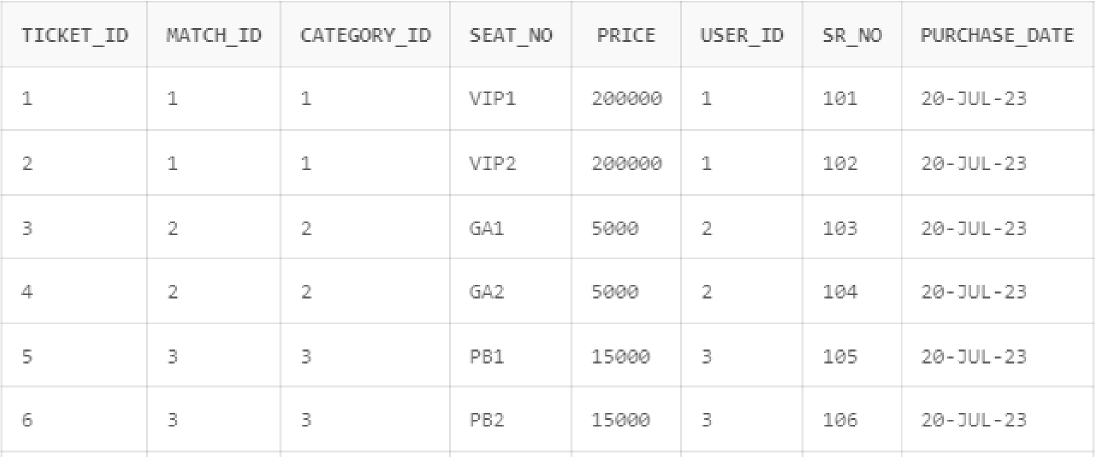
```
CREATE TABLE Person (
   User_id INT PRIMARY KEY,
   Name VARCHAR(100) NOT NULL,
   Password VARCHAR(255) NOT NULL,
   Age INT,
   Address VARCHAR(255),
   Email VARCHAR(100) UNIQUE NOT NULL
);



INSERT INTO Person VALUES (1, 'Rohit Sharma', '264', 34, 'Mumbai, India', 'rohit@gmail.com');
INSERT INTO Person VALUES (2, 'KL Rahul', '112', 29, 'Bangalore, India', 'klrahul@gmail.com');
INSERT INTO Person VALUES (3, 'Virat Kohli', '183', 32, 'Delhi, India', 'virat@gmail.com');
INSERT INTO Person VALUES (4, 'Mitchell Starc', '6/28', 31, 'Sydney, Australia', 'mitchell@gmail.com');
INSERT INTO Person VALUES (5, 'Trent Boult', '7/34', 32, 'Tauranga, New Zealand', 'trent@gmail.com');
```



USER_ID	NAME	PASSWORD	AGE	ADDRESS	EMAIL
1	Rohit Sharma	264	34	Mumbai, India	rohit@gmail.com
2	KL Rahul	112	29	Bangalore, India	klrahul@gmail.com
3	Virat Kohli	183	32	Delhi, India	virat@gmail.com
4	Mitchell Starc	6/28	31	Sydney, Australia	mitchell@gmail.com
5	Trent Boult	7/34	32	Tauranga, New Zealand	trent@gmail.com

❖ Ticket

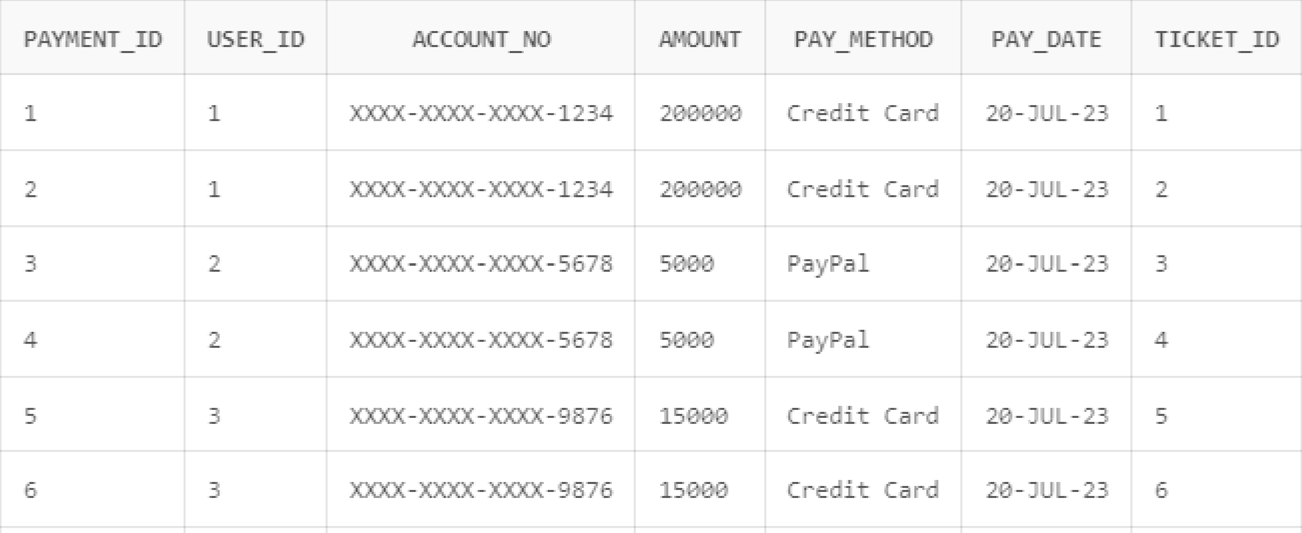
```
CREATE TABLE Ticket (
    Ticket_id INT PRIMARY KEY,
    Match_id INT,
    Category_id INT,
    Seat_no VARCHAR(10) NOT NULL,
    Price DECIMAL(10, 2) NOT NULL,
    User_id INT,
    Sr_no INT NOT NULL,
    Purchase_date DATE NOT NULL,
    FOREIGN KEY (Match_id) REFERENCES Matches(Match_id),
    FOREIGN KEY (Category_id) REFERENCES Category(Category_id),
    FOREIGN KEY (User_id) REFERENCES Person(User_id)
);


INSERT INTO Ticket VALUES (1, 1, 1, 'VIP1', 200000, 1, 101, '20-July-2023');
INSERT INTO Ticket VALUES (2, 1, 1, 'VIP2', 200000, 1, 102, '20-July-2023');
INSERT INTO Ticket VALUES (3, 2, 2, 'GA1', 5000, 2, 103, '20-July-2023');
INSERT INTO Ticket VALUES (4, 2, 2, 'GA2', 5000, 2, 104, '20-July-2023');
INSERT INTO Ticket VALUES (5, 3, 3, 'PB1', 15000, 3, 105, '20-July-2023');
INSERT INTO Ticket VALUES (6, 3, 3, 'PB2', 15000, 3, 106, '20-July-2023');
```



TICKET_ID	MATCH_ID	CATEGORY_ID	SEAT_NO	PRICE	USER_ID	SR_NO	PURCHASE_DATE
1	1	1	VIP1	200000	1	101	20-JUL-23
2	1	1	VIP2	200000	1	102	20-JUL-23
3	2	2	GA1	5000	2	103	20-JUL-23
4	2	2	GA2	5000	2	104	20-JUL-23
5	3	3	PB1	15000	3	105	20-JUL-23
6	3	3	PB2	15000	3	106	20-JUL-23

❖ Payment_details

```
CREATE TABLE Payment_Details (
   Payment_id INT PRIMARY KEY,
   User_id INT,
   Account_no VARCHAR(20),
   Amount DECIMAL(10, 2) NOT NULL,
   Pay_method VARCHAR(50),
   Pay_date DATE,
   Ticket_id INT,
   FOREIGN KEY (User_id) REFERENCES Person(User_id),
   FOREIGN KEY (Ticket_id) REFERENCES Ticket(Ticket_id)
);


INSERT INTO payment_details VALUES (1, 1, 'XXXX-XXXX-XXXX-1234', 200000, 'Credit Card', '20-July-2023', 1);
INSERT INTO payment_details VALUES (2, 1, 'XXXX-XXXX-XXXX-1234', 200000, 'Credit Card', '20-July-2023', 2);
INSERT INTO payment_details VALUES (3, 2, 'XXXX-XXXX-XXXX-5678', 5000, 'PayPal', '20-July-2023', 3);
INSERT INTO payment_details VALUES (4, 2, 'XXXX-XXXX-XXXX-5678', 5000, 'PayPal', '20-July-2023', 4);
```



PAYMENT_ID	USER_ID	ACCOUNT_NO	AMOUNT	PAY_METHOD	PAY_DATE	TICKET_ID
1	1	XXXX-XXXX-XXXX-1234	200000	Credit Card	20-JUL-23	1
2	1	XXXX-XXXX-XXXX-1234	200000	Credit Card	20-JUL-23	2
3	2	XXXX-XXXX-XXXX-5678	5000	PayPal	20-JUL-23	3
4	2	XXXX-XXXX-XXXX-5678	5000	PayPal	20-JUL-23	4
5	3	XXXX-XXXX-XXXX-9876	15000	Credit Card	20-JUL-23	5
6	3	XXXX-XXXX-XXXX-9876	15000	Credit Card	20-JUL-23	6

Normalization comments

- In the Matches table, we have a dependency on Tournament_id and Venue_id. To avoid redundancy, we can create a new table Tournament_Match to link tournaments with matches. Similarly, we can create a new table Venue_Match to link venues with matches.
  - Tournament_Match (Tournament_Match_id, Tournament_id, Match_id)
  - Venue_Match (Venue_Match_id, Venue_id, Match_id)

- In the Ticket table, we have a dependency on Match_id, Category_id, and User_id. We can create a new table Match_Ticket to link matches with tickets, and a table User_Ticket to link users with tickets. This will eliminate redundancy.
  - Match_Ticket (Match_Ticket_id, Match_id, Category_id, Seat_no, Price, Sr_no, Purchase_date)
  - User_Ticket (User_Ticket_id, User_id, Ticket_id)

CRUD

1. Create

```
CREATE TABLE Tournament (
    Tournament_id INT PRIMARY KEY,
    Name VARCHAR(50) NOT NULL,
    Format VARCHAR(50),
    Host_nation VARCHAR(50),
    Teams INT NOT NULL,
    Total_matches INT NOT NULL,
    Start_date DATE,
    End_date DATE
);
```

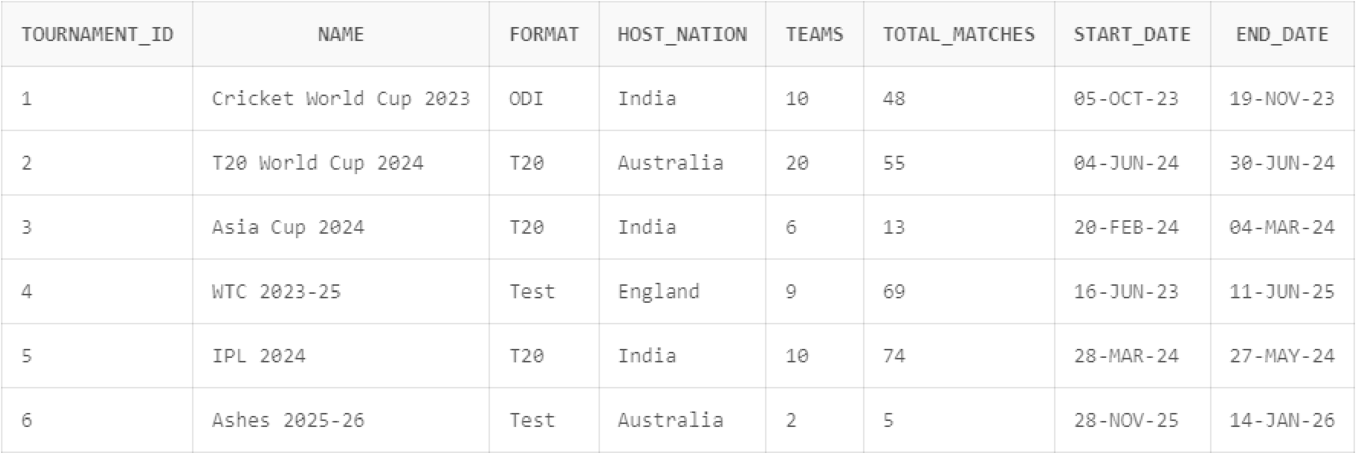
```
CREATE TABLE Venue (
  Venue_id INT PRIMARY KEY,
  Venue_name VARCHAR(100) NOT NULL,
  City VARCHAR(50) NOT NULL,
  Country VARCHAR(50),
  Capacity INT,
  Association VARCHAR(100),
  Address VARCHAR(255)
);
```

```
CREATE TABLE Ticket (
  Ticket_id INT PRIMARY KEY,
  Match_id INT,
  Category_id INT,
  Seat_no VARCHAR(10) NOT NULL,
  Price DECIMAL(10, 2) NOT NULL,
  User_id INT,
  Sr_no INT NOT NULL,
  Purchase_date DATE NOT NULL,
  FOREIGN KEY (Match_id) REFERENCES Matches(Match_id),
  FOREIGN KEY (Category_id) REFERENCES Category(Category_id),
  FOREIGN KEY (User_id) REFERENCES Person(User_id)
);
```

```
CREATE TABLE Matches (
   Match_id INT PRIMARY KEY,
   Match_name VARCHAR(255),
   Tournament_id INT,
   Venue_id INT,
   Ticket_status VARCHAR(50),
   Match_date DATE,
   Match_time VARCHAR(20),
   FOREIGN KEY (Tournament_id) REFERENCES Tournament(Tournament_id),
   FOREIGN KEY (Venue_id) REFERENCES Venue(Venue_id)
);


CREATE TABLE Category (
   Category_id INT PRIMARY KEY,
   Name VARCHAR(50) NOT NULL,
   Special_feature VARCHAR(255)
);


CREATE TABLE Person (
   User_id INT PRIMARY KEY,
   Name VARCHAR(100) NOT NULL,
   Password VARCHAR(255) NOT NULL,
   Age INT,
   Address VARCHAR(255),
   Email VARCHAR(100) UNIQUE NOT NULL
);



CREATE TABLE Payment_Details (
   Payment_id INT PRIMARY KEY,
   User_id INT,
   Account_no VARCHAR(20),
   Amount DECIMAL(10, 2) NOT NULL,
   Pay_method VARCHAR(50),
   Pay_date DATE,
   Ticket_id INT,
   FOREIGN KEY (User_id) REFERENCES Person(User_id),
   FOREIGN KEY (Ticket_id) REFERENCES Ticket(Ticket_id)
);
```

2. Read

- **Select * from Tournament;**



TOURNAMENT_ID	NAME	FORMAT	HOST_NATION	TEAMS	TOTAL_MATCHES	START_DATE	END_DATE
1	Cricket World Cup 2023	ODI	India	10	48	05-OCT-23	19-NOV-23
2	T20 World Cup 2024	T20	Australia	20	55	04-JUN-24	30-JUN-24
3	Asia Cup 2024	T20	India	6	13	20-FEB-24	04-MAR-24
4	WTC 2023-25	Test	England	9	69	16-JUN-23	11-JUN-25
5	IPL 2024	T20	India	10	74	28-MAR-24	27-MAY-24
6	Ashes 2025-26	Test	Australia	2	5	28-NOV-25	14-JAN-26

- **SELECT * FROM Matches WHERE Match_name = 'Ind vs Pak' AND Tournament_id = 1;**

  - Shows Ind vs Pak Match of Cricket World Cup 2023

- **SELECT * FROM Matches**

  WHERE Tournament_id = (SELECT Tournament_id FROM Tournament WHERE Name = 'Ashes 2025-26');

  - Shows all matches of Ashes 2025-26

- **SELECT DISTINCT P.Name FROM Person P**

  INNER JOIN Ticket T ON P.User_id = T.User_id

  INNER JOIN Matches M ON T.Match_id = M.Match_id

  INNER JOIN Venue V ON M.Venue_id = V.Venue_id

  WHERE V.Venue_name = 'Wankhede Stadium' AND T.Price > 4000;

  - Shows all users who buy tickets greater than 4000 price at Wankhede stadium

- **SELECT Venue_name, Capacity FROM Venue WHERE Capacity > 80000;**

  - Shows venues with capacity > 80000

3.Update

-
  ```
  UPDATE Ticket SET Price = 22000 WHERE Ticket_id = 1;
  ```

  - Update the price of a specific ticket

-
  ```
  UPDATE Matches SET Match_date = '15-Oct-2023', Match_time = '4:00 PM' WHERE Match_id = 1;
  ```

  - Update the match date and time

-
  ```
  UPDATE Category
   SET Special_feature = 'Enhanced seating experience with complimentary snacks'
   WHERE Category_id = 2;
  ```

  - Update the special feature of a category

-
  ```
  UPDATE Matches m
   SET m.Ticket_status = 'Sold Out'
   WHERE NOT EXISTS (
  SELECT  1
   FROM Ticket t
   WHERE m.Match_id = t.Match_id AND m.Ticket_status = 'Available'
   );
  ```

  -update the Ticket_status in the Ticket table to 'Sold Out' for all matches that have no available tickets

4.Delete

-
  ```
  DELETE FROM Category WHERE Special_feature = 'Luxurious seating with gourmet dining options';
  ```

  -Delete all rows from the Category table where Special_feature is like this

-
  ```
  DELETE FROM Ticket WHERE User_id IS NULL;
  ```

  -remove all tickets that do not have an associated user

References

- Henry Korth Book for designing ER Diagram
- Canva to create the ER diagram digitally