



# **Database Management System**

**UE21CS351A**

## **Sports Department Management System**

*Project Report*

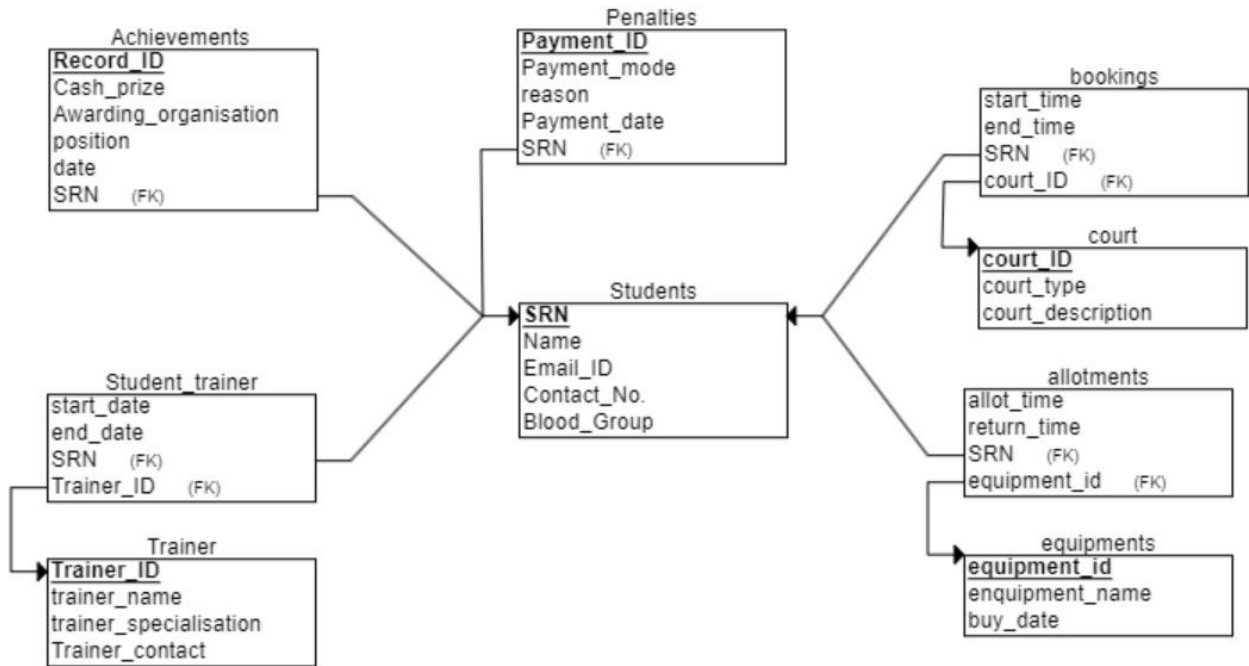
**Jugal Kothari, PES1UG21CS251**

**Kshitij Agarwal, PES1UG21CS292**

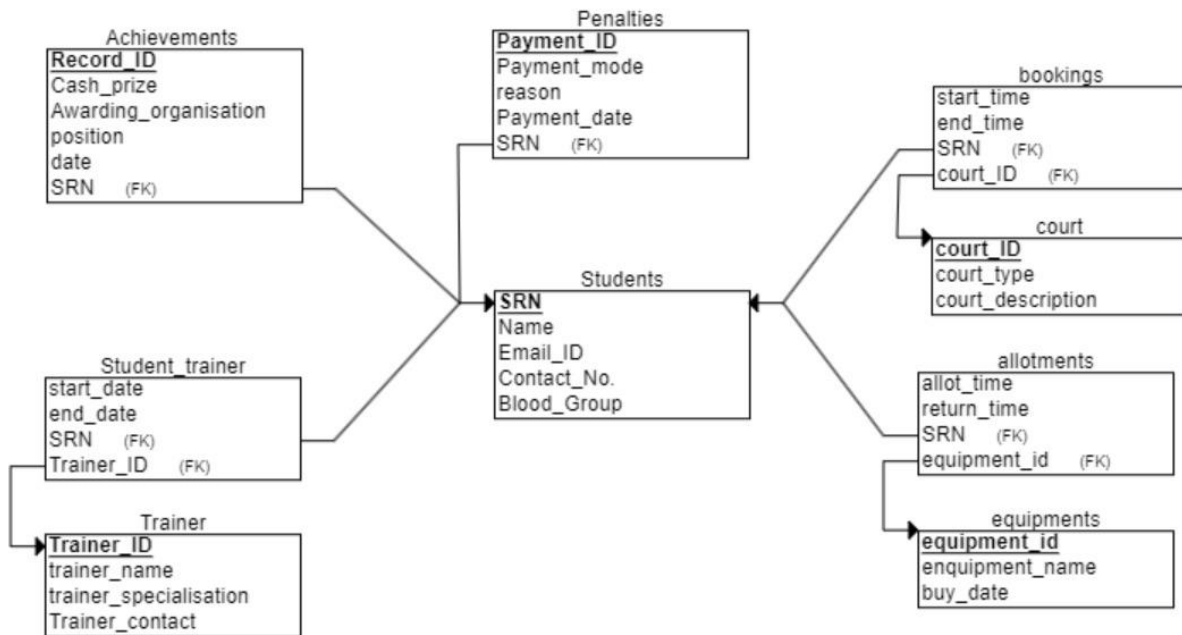
**Mentor: Prof. Bhargavi Mokashi**

## UE21CS351A: Database Management System

### E-R Diagram



## Relational Schema



## UE21CS351A: Database Management System

### MINI PROJECT USER REQUIREMENT SPECIFICATION

#### 1.Introduction

Purpose of the project: The purpose of the Sports Facilities Management System project is to create a comprehensive and efficient software solution that facilitates the effective management of sports facilities within the University. This system aims to streamline the management of various aspects related to sports facilities, including equipment, courts, penalties, achievements, students, and coaching. The key purposes of the project are:

- Efficient Facility Management
- Achievement Recognition
- Penalty Tracking
- Coaching Management

**Scope of the project:** The scope of the Sports Facilities Management System project outlines the boundaries and limitations of the system. It defines what will and will not be included in our project.

- User Management: The system will include user profiles for students and administrators allowing them to perform role-specific actions.
- Facility Management: The system will manage sports facilities, including courts and equipment, enabling booking courts and borrowing equipment.
- Penalty Management: The system will record and manage penalties imposed on students for rule violations.
- Achievement Tracking: Record and display student achievements, including date, position, cash prize, and awarding organization.

#### **Out of Scope:**

- Financial Transactions: The system will not handle financial transactions or payment processing. Payment details may be recorded for penalties and cash prizes, but actual financial transactions will occur through external payment systems.

- Hardware Procurement: The project will not involve the purchase or setup of physical hardware for the sports facilities.
- Mobile Applications: Development of mobile applications for the system is not within the scope of this project but could be considered for future enhancements.

## **2. Project Description**

**Project Overview:** This system offers a range of features and functionalities to efficiently handle various aspects of sports facility management. Here is an overview of the key components and capabilities of the system:

### **- User Management:**

Student Profiles: Students can create and manage their profiles within the system, providing essential information such as their name, contact number, email address, and blood group.

Administrator Access: Administrators have privileged access to manage the entire system.

### **- Facility Management:**

Equipment Management: The system maintains a catalogue of sports equipment, including equipment IDs and names, and tracks their availability.

Court Management: Courts are categorized by type, and the system manages court bookings, ensuring efficient scheduling and utilization.

### **- Student Services:**

Court Bookings: Students can book available courts for specific time slots through the system, with booking records and schedules.

Achievement Tracking: Students' sports achievements, including positions, cash prizes, and awarding organizations, are recorded and displayed.

Penalty Management: Penalties incurred by students for rule violations are documented, including payment details and reasons.

**Major Project Functionalities:** The Sports Facilities Management System encompasses several major functionalities to effectively manage sports facilities. Here are the key functionalities of the system.

#### **- User Management:**

User Registration: Students can register and create their profiles within the system.

User Authentication: Secure login and authentication mechanisms to ensure data privacy and system security.

Role-Based Access Control: Assign roles and permissions to users based on their responsibilities (student, administrator).

#### **Facility Management:**

Equipment Management: Catalog and track sports equipment, including equipment IDs, names, and availability status.

Court Management: Maintain a list of courts categorized by type and manage court bookings.

#### **Student Services:**

Equipment Rentals: Allow students to borrow sports equipment.

Court Bookings: Enable students to book available courts for specific time slots.

Penalty Management: Manage penalties incurred by students for rule violations, including payment records and reasons.

### **3.System Features and Function Requirements**

#### **Student:**

Attributes: SRN (PK), name, contact number, email\_id, blood group

Relationships:

-Enrolments (One-to-Many): A student can enrol in multiple events or use multiple equipment.

#### **Functional Requirements:**

Students should be able to register and provide their contact information.

Students can borrow equipment, book courts, and enrol in coaching sessions.

Students should receive penalty records if they violate facility rules.

#### **Equipments:**

Attributes: equipment\_id (PK), equipment\_name, availability

Relationships:

-Equipment Rentals (One-to-Many): Multiple equipments can be borrowed by a student.

**Functional Requirements:**

Equipment should have unique IDs and names.

Equipment should be available for borrowing and borrowing records should be maintained.

**Court:**

Attributes: Court\_id (PK), Court\_type, availability

Relationships:

-Court Bookings (One-to-Many): Multiple students can book courts.

**Functional Requirements:**

Courts should have unique IDs and types.

Students can book courts for specific time slots, and booking records should be maintained.

**Penalties:**

Attributes: SRN (PK), Payment\_date, Payment\_mode, Reason, Status

Relationships:

-Penalty Records (One-to-Many): Each penalty record is associated with one student.

**Functional Requirements:**

Penalty records should be created when students violate facility rules.

Penalty records should include payment details and reasons for penalties.

**Achievements:**

Attributes: SRN (PK), date, position, cash\_prize, awarding\_organisation

Relationships:

Student Achievements (One-to-Many): Each achievement is associated with one student.

**Functional Requirements:**

Achievements should be recorded for students participating in events.

Each achievement should include a date, position, cash prize, and awarding organization.

**Coach:**

Attributes: Trainer\_id (PK), Trainer\_name, Trainer\_specialization, Trainer\_contact

Relationships:

Coaching (One-to-Many): Each coach can provide coaching to multiple students.

Functional Requirements:

Coaches should have unique IDs and specialization areas.

Coaches should be able to provide coaching to students, and coaching records should be maintained.



## Screenshots

Signup page: (Creation)



SRN :

Name :

Sex : ☒ Male ☐ Female

Blood Group : ☐ A+ ☐ A- ☐ B+ ☐ B- ☐ AB+ ☒ AB- ☐ O+ ☐ O-

Mobile :

Email Id :

Password :

[Signup](#)

Already an account [Login](#)

Before inserting new student:

```
mysql> select * from student;
```

SRN	name	contactno	emailid	bloodgroup	password	sex
PES1UG21CS251	Jugal Kothari	9900360365	jugalprakashk19@gmail.com	O+	jugal123	M
PES1UG21CS252	Alice Johnson	9876543210	alice@example.com	A-	alice123	F
PES1UG21CS253	Bob Smith	8765432109	bob@example.com	B+	bob123	M
PES1UG21CS254	Catherine Davis	7654321098	catherine@example.com	O-	catherine123	F
PES1UG21CS255	David Wilson	6543210987	david@example.com	AB+	david123	M
PES1UG21CS256	Emily Miller	5432109876	emily@example.com	A+	emily123	F
PES1UG21CS257	Frank Thomas	4321098765	frank@example.com	B-	frank123	M
PES1UG21CS258	Grace White	3210987654	grace@example.com	O+	grace123	F
PES1UG21CS259	Harry Brown	2109876543	harry@example.com	AB-	harry123	M
PES1UG21CS292	Kshitij Agarwal	8368552979	kshitijagarwal2808@gmail.com	O+	kshitij123	M

10 rows in set (0.02 sec)

After inserting new student:

```
mysql> select * from student;
```

SRN	name	contactno	emailid	bloodgroup	password	sex
PES1UG21CS251	Jugal Kothari	9900360365	jugalprakashk19@gmail.com	O+	jugal123	M
PES1UG21CS252	Alice Johnson	9876543210	alice@example.com	A-	alice123	F
PES1UG21CS253	Bob Smith	8765432109	bob@example.com	B+	bob123	M
PES1UG21CS254	Catherine Davis	7654321098	catherine@example.com	O-	catherine123	F
PES1UG21CS255	David Wilson	6543210987	david@example.com	AB+	david123	M
PES1UG21CS256	Emily Miller	5432109876	emily@example.com	A+	emily123	F
PES1UG21CS257	Frank Thomas	4321098765	frank@example.com	B-	frank123	M
PES1UG21CS258	Grace White	3210987654	grace@example.com	O+	grace123	F
PES1UG21CS259	Harry Brown	2109876543	harry@example.com	AB-	harry123	M
PES1UG21CS292	Kshitij Agarwal	8368552979	kshitijagarwal2808@gmail.com	O+	kshitij123	M
PES1UG21CS293	Tim David	8345934605	timd32@gmail.com	AB-	tim123	M

11 rows in set (0.00 sec)

Login Page:



UserEmail/ SRN :

Password :

Login

Don't have account [register](#)

Home Page:

Sports Department Management System

[Home](#)
[Borrow Equipment](#)
[Court Bookings](#)
[Achievements](#)
[Trainers](#)
[Log Out](#)

Welcome to the Sports Department Management System

This system provides you with the tools to manage student data, faculty data, and sports equipment efficiently.

Use the navigation menu above to perform various tasks:

- **Add/Edit Student Data:** Add or edit information about students participating in sports.
- **Manage Sports Equipment:** Keep track of sports equipment, their availability, and maintenance.

Borrow Equipment: (Reading and Updating)

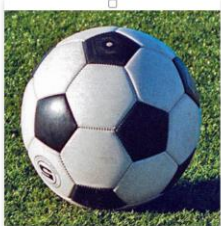
Table before borrowing:

```
mysql> select * from equipment;
+-----+-----+-----+-----+
| equipid | equipname | buydate | availability |
+-----+-----+-----+-----+
| basketbl11 | basketball | 2023-11-15 | 2 |
| cricketbl1 | Cricketball | 2023-11-15 | 1 |
| football11 | Football | 2023-11-15 | 1 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

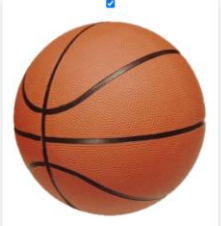
Borrowing 1 basketball:

**Equipments**

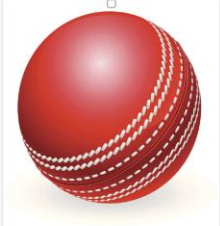
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Football



Basketball



Cricketball

Table after borrowing:

```
mysql> select * from equipment;
```

equipid	equipname	buydate	availability
basketbl11	basketball	2023-11-15	1
cricketbl1	Cricketball	2023-11-15	1
football11	Football	2023-11-15	1

3 rows in set (0.00 sec)

```
mysql> select * from allotments;
```

allot_time	returntime	equipid	SRN
12:57:45.512395	NULL	basketbl11	PES1UG21CS292

1 row in set (0.00 sec)

## Return Equipment: (Deleting)

Return Equipment

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[Log Out](#)

Student ID: PES1UG21CS292

**Borrowed equipments**

Equipid	Allot time	Return
basketbl11	12:57 p.m.	<a href="#">Return</a>

Before return :

```
mysql> select * from allotments;
+-----+-----+-----+-----+
| allot_time | returtime | equipid | SRN |
+-----+-----+-----+-----+
| 12:57:45.512395 | NULL | basketbl11 | PES1UG21CS292 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

After return:

Return Equipment

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[Log Out](#)

Student ID: PES1UG21CS292

**Borrowed equipments**

Equipid	Allot time	Return
---------	------------	--------

```
mysql> select * from allotments;
Empty set (0.00 sec)
```

Achievements: (**Trigger**)

Student Achievements

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Kshitij Agarwal

Student ID: PES1UG21CS292

Achievements

Position	Award Organization	Cash Prize
1	basketball	1000

Total cash prize won : 1000

Add achievements:

Sports Department Management System

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Add Student Achievement

Cash Prize:

Achievement Organisation:

Date:

Position:

Submit

Before adding:

```
mysql> select * from achievements;
+-----+-----+-----+-----+-----+-----+
| recordid | recorddate | position | awardorg | cashprize | SRN |
+-----+-----+-----+-----+-----+-----+
| ACH1 | 2023-11-16 | 1 | PES University | 1500 | PES1UG21CS251 |
| ACH2 | 2023-11-16 | 1 | Organization1 | 1000 | PES1UG21CS251 |
| ACH3 | 2023-11-19 | 1 | basketball | 1000 | PES1UG21CS292 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

After adding:

**Student Achievements**

Home
Borrow Equipment
Court Bookings
Achievements
Trainers
Add Achievements
Log Out

**Kshitij Agarwal**

Student ID: PES1UG21CS292

**Achievements**

Position	Award Organization	Cash Prize
1	basketball	1000
2	Cricket	1000

Total cash prize won : 2000

);

```
mysql> select * from achievements;
+-----+-----+-----+-----+-----+-----+
| recordid | recorddate | position | awardorg | cashprize | SRN |
+-----+-----+-----+-----+-----+-----+
| ACH1 | 2023-11-16 | 1 | PES University | 1500 | PES1UG21CS251 |
| ACH2 | 2023-11-16 | 1 | Organization1 | 1000 | PES1UG21CS251 |
| ACH3 | 2023-11-19 | 1 | basketball | 1000 | PES1UG21CS292 |
| ACH4 | 2023-11-23 | 2 | Cricket | 1000 | PES1UG21CS292 |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

The add achievement function uses a trigger to auto generate the achievement id as follows:

```

| before_insert_achievements | INSERT | achievements | BEGIN
  DECLARE next_id INT;

  SELECT MAX(SUBSTRING(recordid, 4)) + 1 INTO next_id
  FROM achievements;

  IF next_id IS NULL THEN
    SET next_id = 1;
  END IF;

  SET NEW.recordid = CONCAT('ACH', next_id);
END | BEFORE | 2023-11-17 08:46:02.79 | ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_EN
GINE_SUBSTITUTION | root@localhost | utf8mb4 | utf8mb4_0900_ai_ci | utf8mb4_0900_ai_ci |
+-----+-----+-----+-----+-----+-----+

```

Trainer:

Assigned Trainer

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[Borrow Equipment](#)
[Court Bookings](#)
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[Log Out](#)

Kshitij Agarwal

Student ID: PES1UG21CS292


Trainers

Trainer Name	Specialization	Start Date	End Date
Sophia Harris	Zumba	2023, 11, 16	2024, 11, 16


Courts:

Court bookings


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[Return Court](#)
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[Court Bookings](#)
[Achievements](#)
[Trainers](#)
[Log Out](#)

☐


Football Court

☒


Basketball court

☐


Cricket nets

Submit

Before booking the court:

```
mysql> select * from court;
+-----+-----+-----+-----+
| courtid | courttype | courtdesc | avail |
+-----+-----+-----+-----+
| bbcrt | Basketball | Basketball court | 1 |
| crcrt | Cricket | Cricket net | 1 |
| ftcrt | Football | Football turf | 1 |
+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

After booking:

```
mysql> select * from court;
+-----+-----+-----+-----+
| courtid | courttype | courtdesc | avail |
+-----+-----+-----+-----+
| bbcrt   | Basketball | Basketball court | 0 |
| crcrt   | Cricket    | Cricket net      | 1 |
| ftcrt   | Football   | Football turf    | 1 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

Return court:

**Return Court**

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Student ID: PES1UG21CS292

**Booked Courts**

CourtId	Start time	Return
bbcrt	1:08 p.m.	<input type="button" value="Return"/>

Before return :

```
mysql> select * from bookings;
+-----+-----+-----+-----+
| start_time | end_time | courtid | SRN |
+-----+-----+-----+-----+
| 13:08:42.530171 | NULL | bbcrt | PES1UG21CS292 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```



After return :

### Return Court

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Student ID: PESIUG21CS292

**Booked Courts**

CourtId	Start time	Return
---------	------------	--------

```
mysql> select * from bookings;  
Empty set (0.00 sec)
```