Database Management System

UE21CS351A

Sports Department Management System

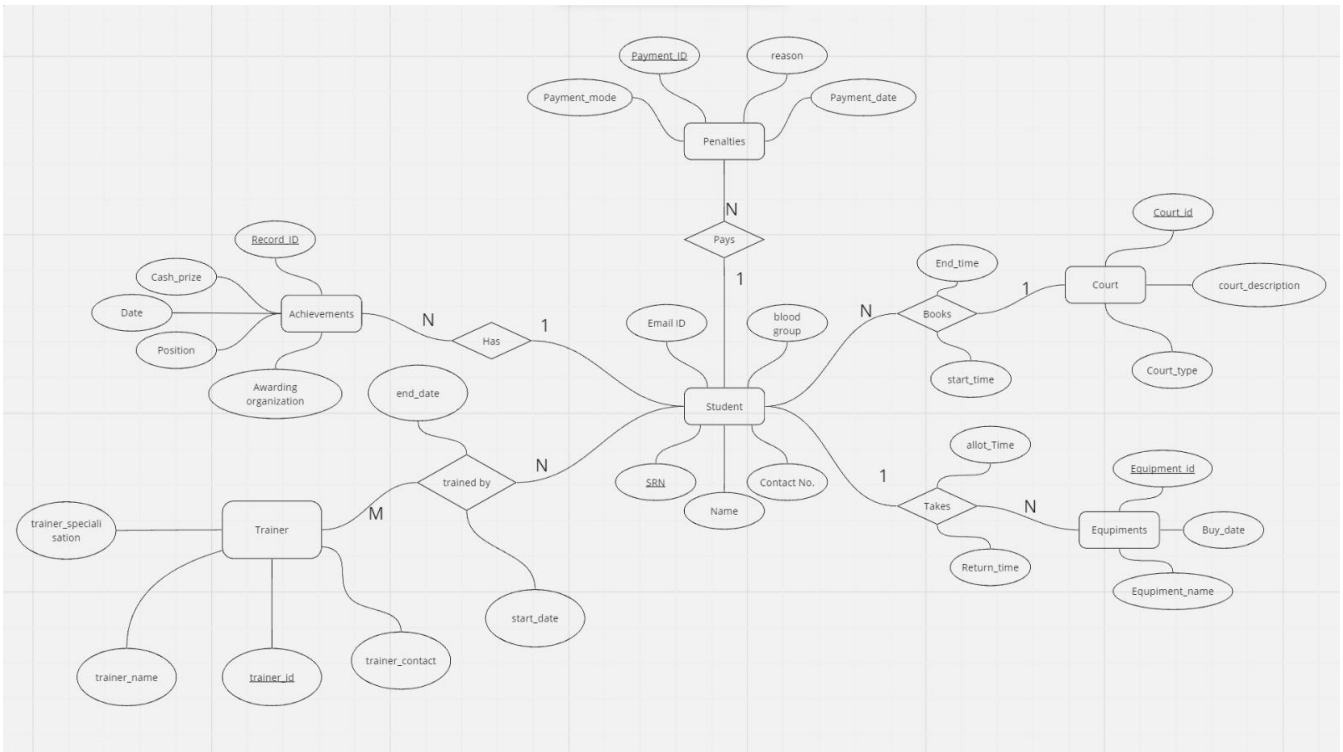*Project Report*

Jugal Kothari, PES1UG21CS251

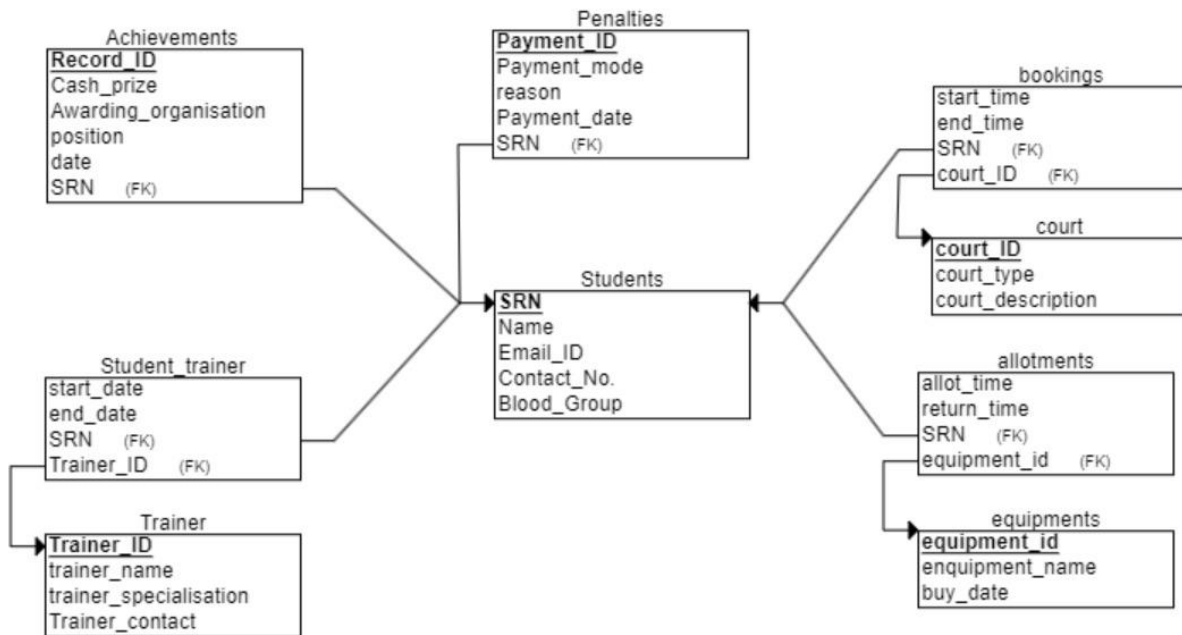**Kshitij Agarwal, PES1UG21CS292**

Mentor: Prof. Bhargavi Mokashi

UE21CS351A: Database Management System

E-R Diagram

Relational Schema

Achievements
- Record_ID
- Cash_prize
- Awarding_organisation
- position
- date
- SRN (FK)

Penalties
- Payment_ID
- Payment_mode
- reason
- Payment_date
- SRN (FK)

bookings
- start_time
- end_time
- SRN (FK)
- court_ID (FK)

Students
- SRN
- Name
- Email_ID
- Contact_No.
- Blood_Group

court
- court_ID
- court_type
- court_description

Student_trainer
- start_date
- end_date
- SRN (FK)
- Trainer_ID (FK)

allotments
- allot_time
- return_time
- SRN (FK)
- equipment_id (FK)

Trainer
- Trainer_ID
- trainer_name
- trainer_specialisation
- Trainer_contact

equipments
- equipment_id
- enquipment_name
- buy_date

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 :	PES1UG21CS293
Name :	Tim David

Sex : ● Male ○ Female
Blood Group : ○ A+ ○ A- ○ B+ ○ B- ○ AB+ ● AB- ○ O+ ○ O-

Mobile :	8345934605
Email Id :	timd32@gmail.com
Password :	tim123

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 : Kshitij

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**)
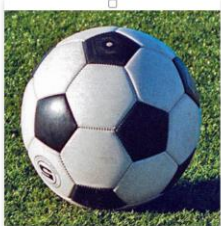
Table before borrowing:

```
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)
```
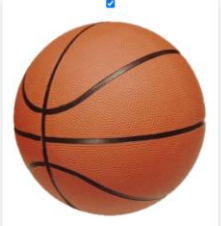
Borrowing 1 basketball:
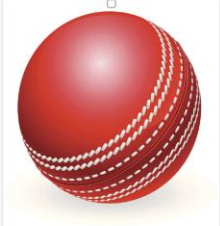
Table after borrowing:

```
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: (**<u>Deleting</u>**)

Before return :

After return:

Achievements: (**Trigger**)

Add achievements:

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:

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:

Courts:

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:

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 :

Home   Borrow Equipment   Court Bookings   Achievements   Trainers   Log Out

Student ID: PES1UG21CS292

Booked Courts

Courtid	Start time	Return

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