

**UE22CS341A - Software Engineering**  
**Synopsis / Project Proposal**

*Sports DataBaseManagementSystem*

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Formatting Guidelines : Submit in pdf format

Naming convention : **Synopsis PES2UG22CS517 PES2UG22CS523-** (Write SRNs in ascending order)

### **Proposed Project Description**

The proposed project is a Sports Database Management System (DBMS) designed to efficiently manage and organize sports-related data. This system will handle to sports teams, leagues, and organizations by providing a centralized platform for storing and retrieving essential data, such as match results, team information, and league standings. The project aims to streamline data management processes, improve decision-making through analytics, and enhance user experience by offering accessible features.

The typical users of the Sports DBMS will include coaches, sports analysts, team managers, league organizers, and fans also developers.

### **Functional Features**

- **Player Management:** Users will be able to add, update, and manage player profiles, including personal details, performance statistics.
- **Team Management:** The system will allow for the creation and management of teams, coaching staff, and historical performance records.
- **Match Scheduling:** Users will be able to schedule matches, assigning venues, and notifying teams.
- **Match Results :** The DBMS will enable the entry and storage of match results.
- **User Access Control:** The DBMS will offer different access levels, ensuring that only authorized users can perform specific tasks or view sensitive data.

## **Plan of Work and Product Ownership**

### **Requirement phase**

- Full month of Aug '2024
- Collected information from Sports coach to gather requirements.

### **Designing Phase**

- Sep' 2024 - Oct'2024
- Development of initial database schema that includes tables for players, teams, matches and league standings.
- Establishment of relationships between different entities within the database.

### **Implementation phase**

- Oct'24 - Nov'2024
- If everything goes good enough and admin of our college ready to take our project ,  
We will embed/merge this Sports database with PES University's database.

### **Quality Assurance Engineer and Demonstration:**

- Nov'24
- Development and execution of test cases to ensure the system functions correctly.

# **UE22CS341A: Software Engineering Case Study**

## **Unit 1 Deliverable**

### **SRS Document for Sports Database System**

#### **1. Introduction**

##### **1.1 Purpose**

This system is designed to manage information about sports teams, players, matches, venues, tournaments, and match events. The database will facilitate tracking and analysis of various aspects of sports management.

##### **1.2 Scope**

The Sports Database system will provide a structured and efficient way to store and retrieve information related to sports teams, players, matches, venues, tournaments, and match events. The system aims to support sports management and analysis by storing detailed data on teams, players, and their performances.

##### **1.3 Definitions, Acronyms, and Abbreviations**

- **DBMS:** Database Management System
- **SRS:** Software Requirements Specification
- **PK:** Primary Key
- **FK:** Foreign Key

##### **1.4 References**

- IEEE Standard for Software Requirements Specifications (IEEE Std 830-1998)

##### **1.5 Overview**

This document outlines the functional and non-functional requirements for the Sports Database system. It includes details on system features, user requirements, external interfaces, and constraints.

#### **2. Overall Description**

##### **2.1 Product Perspective**

The Sports Database system will be a centralized repository for managing sports-related data. It will allow users to enter, update, and query information about teams, players, matches, venues, and tournaments.

##### **2.2 Product Functions**

- Manage teams and player information.
- Track match details and outcomes.
- Record and retrieve information about venues.
- Manage tournament details and associated matches.

## 2.3 User Classes and Characteristics

- **Sports Managers:** Manage team and player data, schedule matches, and oversee tournaments.
- **Coaches:** Update player statistics and match events.
- **Players:** View personal statistics and match details.
- **Administrators:** Maintain the database and ensure data integrity.

## 2.4 Operating Environment

- **Software:** Database Management System, Application Server, Web Browser
- **Hardware:** Server with adequate storage and processing capabilities

## 2.5 Design and Implementation Constraints

- The system must handle concurrent access from multiple users.
- It should integrate with existing sports management software if necessary.

## 2.6 Assumptions and Dependencies

- Users will have access to a web interface for interacting with the database.
- Data integrity and security will be enforced through the application layer.

## 3. External Interface Requirements

### 3.1 User Interfaces

- Web-based application interface for accessing and managing the database.
- Forms for entering and updating information about teams, players, matches, venues, and tournaments.

### 3.2 Hardware Interfaces

- No specific hardware interfaces required; the system will be accessed via standard web browsers.

### 3.3 Software Interfaces

- Interface with the chosen DBMS for data storage and retrieval.
- API integrations if required with other sports management tools.

### 3.4 Communication Interfaces

- HTTP/HTTPS for web-based interactions.
- SQL for database queries and updates.

## **4. System Features**

### **4.1 Team Requirements**

#### **4.1.1 Description:**

Allows users to manage information about sports teams, including creating, updating, and deleting team records.

#### **4.1.2 Functional Requirements:**

- The system shall provide an interface to add new teams.
- The system shall allow updating existing team information.
- The system shall enable deletion of team records.

### **4.2 Player Management**

#### **4.2.1 Description:**

Manages player information, including adding, updating, and removing players from teams.

#### **4.2.2 Functional Requirements:**

- The system shall provide an interface to add new players.
- The system shall allow updating player details.
- The system shall enable the removal of players.

### **4.3 Match Management**

#### **4.3.1 Description:**

Handles information about matches, including scheduling, results, and team participation.

#### **4.3.2 Functional Requirements:**

- The system shall allow users to schedule new matches.
- The system shall record match results.

### **4.4 Venue Management**

#### **4.4.1 Description:**

Manages details about match venues.

#### **4.4.2 Functional Requirements:**

- The system shall allow users to add and update venue details.
- The system shall enable the removal of venues.

### **4.5 Tournament Management**

#### **4.5.1 Description:**

Handles information about sports tournaments, including details about the tournament and participating teams.

#### **4.5.2 Functional Requirements:**

- The system shall provide an interface to add new tournaments.
- The system shall allow updating tournament details.

- The system shall display information about ongoing tournaments.

## **5. Non-Functional Requirements**

### **5.1 Performance Requirements**

- The system shall handle concurrent access by multiple users

### **5.2 Security Requirements**

- The system shall ensure data security and integrity through appropriate access controls and encryption.

### **5.3 Usability Requirements**

- The system shall provide a user-friendly interface for managing sports data.

### **5.4 Reliability Requirements**

- The system shall ensure data availability

## **6. Other Requirements**

### **6.1 Regulatory Requirements**

- The system shall comply with data protection regulations relevant to the user's region.

### **6.2 Environmental Requirements**

- The system shall be deployable on common web servers and accessible through standard web browsers.

## Requirements Traceability Matrix (RTM)

Requirement ID	Description	Design Specification	Implementation Module	Test Case
4.1	Team Management			
4.2	Player Management			
4.3	Match Management			
4.4	Venue Management			