A close-up of a logo

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**ENGR 5520G: Software Development Methods and Tools**

**Project Proposal**

**Project Title**: Football Club Webapp Development

**Project Group**:

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**Functional and Non-Functional Requirements Analysis for Football Club Webapp**

**1. Introduction** This document provides an analysis of the functional and non-functional requirements for the development of a football club webapp. The webapp is designed to aid a soccer club with information, scheduling, and administration support, in addition to offering an online store. The system is secure, expandable, and accessible for its members.

**2. Functional Requirements** Functional requirements define the specific behavior and features the football club website must support. These requirements describe the system’s core functionalities and interactions with users and administrators.

**2.1 User Authentication**

**Requirement:** The website must allow users to register, log in, and log out securely.

**Details:** User accounts should be created with secure credentials. Passwords must be stored in an encrypted format. There should be password recovery options and session timeout management.

**2.2 Home Page**

**Requirement:** The website must display essential club information, upcoming matches, and recent results.

**Details:** The homepage should dynamically update with the latest news, fixtures, and announcements. It should feature quick links to other sections of the website.

**2.3 Team Management**

**Requirement:** The website must maintain detailed player profiles and statistics.

**Details:** Profiles should include player names, positions, match appearances, and key statistics. Administrators should be able to update player data as needed.

**2.4 Fixtures and Results**

**Requirement:** The website must provide a calendar of events and match results.

**Details:** The fixture list should display upcoming matches with dates and venues. Results should be updated promptly with score details and match highlights.

**2.5 Club Shop**

**Requirement:** The website must include an online merchandise store with cart and payment functionality.

**Details:** Users should be able to browse products, add items to their cart, and complete purchases securely. Payment gateway integration is essential for secure transactions.

**2.6 Club Information**

**Requirement:** The website must provide updates about the club.

**Details:** This section should include club history, achievements, and news articles. Administrators should be able to add and edit information.

**2.7 Contact and Membership**

**Requirement:** The website must include a contact form and membership sign-up option.

**Details:** The contact form should capture user queries and feedback. Membership sign-up should allow users to join the club and access exclusive features.

**2.8 Admin Panel**

**Requirement:** Administrators must be able to update match results, add merchandise, and manage content.

**Details:** The admin panel should provide secure access to manage website content, monitor user activities, and maintain the online store.

**2.9 Club Media**

**Requirement:** The website must display match and event photos and videos.

**Details:** A media gallery should allow users to browse and view multimedia content. Administrators should be able to upload and organize media files.

**2.10 Social Media Integration**

**Requirement:** The website must embed social media posts and provide links to official accounts.

**Details:** Social media feeds should display the latest posts from the club’s accounts. Links to social media platforms should be easily accessible.

**3. Non-Functional Requirements** Non-functional requirements outline the system’s overall qualities and constraints, including performance, security, and usability. These are essential for the website’s efficiency, user satisfaction, and reliability.

**3.1 Performance**

**Requirement:** The website should load quickly and respond to user interactions with minimal delay.

**Details:** Page load times should be under 3 seconds, even when displaying media-rich content. Optimization strategies, such as image compression and caching, should be employed.

**3.2 Scalability**

**Requirement:** The website should handle a high level of users with ease.

**Details:** The backend architecture should be scalable to accommodate more user accounts, multimedia content, and increased traffic without sacrificing performance.

**3.3 Security**

**Requirement:** The website must provide secure access and protect users' personal data.

**Details:** Data encryption protocols should be implemented to safeguard user information. Protection against SQL injection and secure user authentication mechanisms, such as encrypted passwords and CAPTCHA, should be in place.

**3.4 Usability and User Experience (UX)**

**Requirement:** The website should be user-friendly, with an intuitive and attractive interface.

**Details:** The design should adhere to UX best practices, ensuring easy navigation, clear calls to action, and a visually appealing layout. The website should be fully responsive and accessible on desktop and mobile devices.

**3.5 Reliability**

**Requirement:** The website should maintain high uptime with minimal downtime.

**Details:** Monitoring tools should be in place to ensure system availability. Maintenance schedules should be communicated to users, and any unplanned outages should be resolved quickly.

**3.6 Maintainability**

**Requirement:** The website’s codebase should be easy to maintain and update.

**Details:** The code should be modular and well-documented to facilitate bug fixing and feature updates. Version control systems should be used for code management.

1. Use Case Diagram

