



PUSL2021 Computing Group Project

Project Proposal 2024/25

Sport Web Application

Group No: 25

Members:

ID	Name	Degree Program (SE/CN/CS)
10952600	Gavin Ranasinghe	SE
10952549	Dehingage De Silva	SE
10952570	Delpe Silva	SE
10952508	Kavishka Igalagama	SE
10952465	Adhikari Rajapaksha	SE
10953552	Thisuri Gamage	CS
10952617	Dissanayake Dissanayake	SE
10952781	S D Senadeera	SE
10952648	Kodagodage Dias Yapa	SE
10953010	Sachintha Thilakarathna	SE

Introduction

The "Sports Club Registration and Sports Equipment Purchasing Web Application" is a modern online platform designed for people who love sports. With the increasing digitization of the sports industry, adopting a web application will provide a significant competitive advantage to clubs that seek to modernize their operations and offer a seamless experience to their members.

This platform brings together those who want to join sports clubs, meet others, and find sports gear. This application makes it easier to connect with clubs and explore different sports equipment, all in one place. The proposed platform will serve as a comprehensive tool to address current inefficiencies and future-proof the club's management capabilities.

Project Objectives

- To identify the existing challenges faced by sports club staff and members in managing schedules, bookings, and payments such as inconsistent or inadequately updated timetables, ineffective reservation procedures, and restricted access via the internet. Along with communication breakdowns that result in subpar updates and notifications, payment problems like delayed collections, restricted options, and tracking challenges make operations even more challenging.
- To develop a web-based platform that centralizes key functions such as member registration, schedule management, and social gathering. With easy-to-use capabilities for account updates and renewals, the platform will streamline member registration. It will also include a dynamic calendar for current time schedule updates, venue reservations, and attendance monitoring.
- To enhance the platform with additional facilities such as sport equipment/clothing platform for buying and selling. By giving members, the opportunity to exchange goods, make connections with nearby merchants, and purchase club-branded goods, it encourages community involvement. This innovation increases member value, promotes sustainability, and gives the club the opportunity to make money with features like reviews, ratings, and promotional opportunities.
- To develop a continuous initiative that uses this sports website to acquire and utilize donated athletic equipment. This aims to give needy athletes and communities the financial support they require to get involved in athletics. Technology enables targeted delivery to those in need, collaborations with neighborhood organizations, and easy-to-use donations. By assisting underrepresented and economically disadvantaged communities and increasing awareness through donor acknowledgment and stories, it fosters inclusion.
- To empower rural youth by providing access to donated sports equipment and opportunities to engage in athletic activities. By bridging geographical and financial gaps, the platform fosters inclusion, physical fitness, and personal growth, inspiring youngsters to explore their potential and achieve their dreams.

Background and Motivation

In Sri Lanka the place given for most of the sports are subpar and do not meet the international standards like cricket and some other sports. Due to this issue we decided to build an application where all the sports come under one platform which leads to joining leading/professional clubs to develop talents and win national and international competitions to bring fame to the country itself.

Web application like **SriLankaSports.com**, **Sri Lanka Sport Council**, **The Papare**, **Sinhalaese Sports club**, **My Sports** and **Sri Lanka Telecom Rainbow** pages that already exists focuses on to certain criteria like events, news, competition history or the details of their own clubs and about buying and selling of sport equipment(e-commerce).

For an example **SriLankaSports.com**, **Sri Lanka Sport Council**, **The Papare** web application only focuses on the news about competitions and events that happened and their tournament history as well as web applications like **My Sports** only focuses for buying and selling sport equipment's and clothing but they do not provide a comprehensive solution for the overall development of athletes, especially in terms of talent identification, coaching, training resources, and connecting athletes with professional clubs and donations.

Approach/Methodology

When comparing with existing web application as we mentioned above under the background and motivation category each platform guides only about a one criterion but here in our platform, we build the application by guiding on to several features/ criteria's which we haven't gone through before.

Here we focus to let users apply or join to clubs via online since its more flexible and easier rather than joining through physically or other contacting ways. An individual will have the opportunity to join to any of the sports club by stating the nearest place/district they live where our application guides them with the nearest sports club they could join.

Since Sri Lanka is still a developing country who faced economic crisis recently, the financial stability is in a doubtful state for an athlete or sportsman to afford sport equipment and necessary items so we decided to bring up on a feature to let anyone who's willing to donate could donate the sportsman in need by being a strength to win in future.

The targeted clients and potential users who gets involved when building this project are.

1. Sportsman

- They can socially gather with that colleagues who are doing the same sport within their hometown and join one or more clubs
- They will have the ability to share their sports skills and experiences through this web application.
- Sportsmen/sportswomen who can't afford purchasing sports equipment will have the chance to request them through donations.
- They can involve in donating sports equipment through our platform.
- They can buy sport equipment/clothing through our platform.

2. Club Owner

- Club owners have the chance of improving their publicity within our platform.
- Sportsmen/sportswomen can easily find their clubs because of our platform, and it can increase their clubs' member counts.
- They can share Events within our web application.

3. Donators

- Donors could consist of people, such as athletes and sports fans with additional accessories, enterprises, such as merchants and corporations, who donate extra inventory, or institutions, such as clubs, gyms, and schools, who donate obsolete or unused equipment.
- Mentoring athletes from marginalized communities and advocating for equitable access to sports.
- Highlights the difficulties faced by athletes from disadvantaged backgrounds and the impact that donations can have.

The web application for sports club management proposed here is aimed at distinguishing from other solutions through Agile methodology. All in all, the management and development of the online sports club application will greatly improve in flexibility, user involvement as well as a continuous improvement if Agile methodology is adopted. Not only does this approach attempt to solve the issues that many Sri Lankan sports clubs encounter in the present day and age, but it also sets the scope for future expansion of the application, making it far more efficient to provide the users with a platform that will prove more intuitive to use which helps to overcome this problem within our platform.

Sprint Number	Duration	Focus Areas
Sprint 1	Week 1-2	User registration, basic profile setup
Sprint 2	Week 3-4	Event scheduling, initial communication features
Sprint 3	Week 5-6	Geo location integration, club discovery feature
Sprint 4	Week 7-8	Donation system, payment gateway integration

In our project the technology/algorithm utilizes a location-based matching algorithm which guides users to access nearby sports club based on their district or place of residence as we mentioned above. This algorithm ensures athletes can quickly find and apply to clubs that are both relevant and conveniently located. To enhance this, we are integrating Google Maps API into the platform. This improves the user experience by providing real-time, location-based recommendations and allowing athletes to easily communicate with coaches and clubs in their area

Resource Requirements

When it comes to requirements analysis most prominently, we gave our consideration about hardware and software requirements.

1. Hardware requirements

For Development Team:

Developer Workstations

High-performance laptops/desktops for developers, with at least:

- Processor: Intel Core i5 or higher
- RAM: 16 GB or higher
- Storage: SSD (512 GB or higher)

Development Servers (For testing and staging environments):

- Cloud-based or physical servers for code testing, version control, and staging environments.

Recommended configuration:

- Processor: Multi-core (2.4 GHz or higher)
- RAM: 16–32 GB
- Storage: SSD (500 GB or higher)
- Bandwidth: At least 1 Gbps connection

2. Software requirements

Operating system

Development work frame

- Front end – React.js
- Backend -Node.js, Express.js
- Database management system - Mongo DB

Development tools

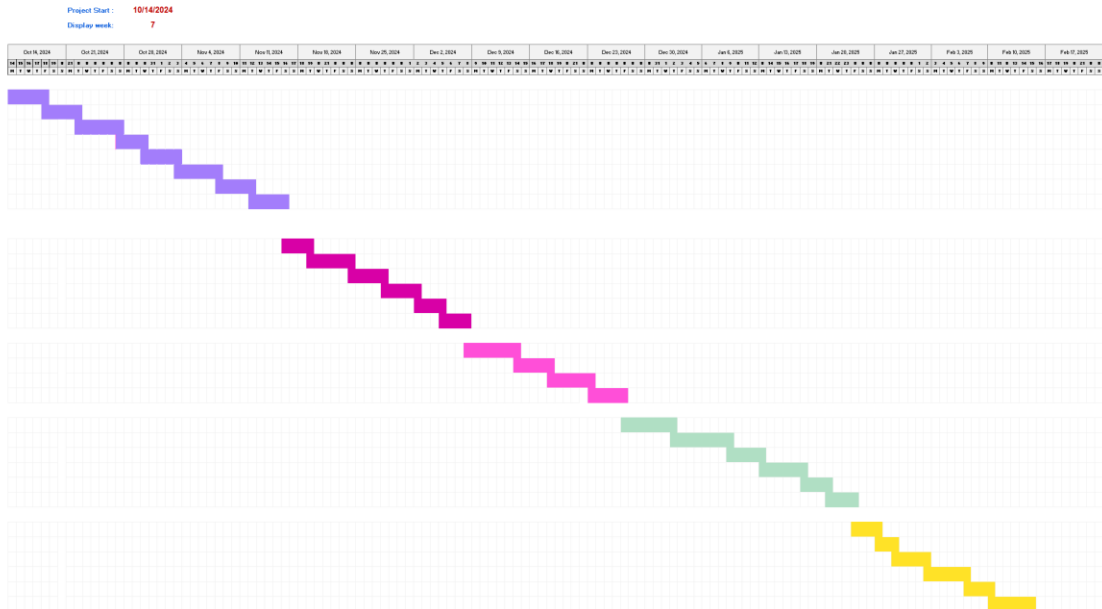
- Version control - Git hub ()
- Code editors – Visual studio code
- Testing stools - hopscotch, browser developer tools, google search console, lighthouse chrome extension
- Production - Apache

Project Plan

<https://nsbm365.sharepoint.com/:f:/g/ErifLgb7EjlBjwZirOMKm34BLq9Djumym9HJCLGzkSaiIA?e=fPuZKN>

Sport Web Application

Task	Duration	START	END
Initiation			
Project Definition	4 days	10/04/2024	10/04/2024
Requirement Gathering	4 days	10/04/2024	10/04/2024
Feasibility Analysis	6 days	10/04/2024	10/04/2024
Resource Allocation	2 days	10/04/2024	10/04/2024
Technology Stack Selection	4 days	10/04/2024	10/04/2024
Risk Analysis	6 days	10/04/2024	10/04/2024
Initial Design & Prototyping	4 days	10/04/2024	10/04/2024
Setting up Development Environment	4 days	10/04/2024	10/04/2024
Planning and Design			
Planning			
Goal Definition	2 days	10/04/2024	10/04/2024
Gather Detailed Requirements	4 days	10/04/2024	10/04/2024
API & Data Source Identification	4 days	10/04/2024	10/04/2024
Risk Management Planning	2 days	10/04/2024	10/04/2024
Budget and Cost Planning	2 days	10/04/2024	10/04/2024
Create detailed Timeline	2 days	10/04/2024	10/04/2024
Design			
UI Design	6 days	10/04/2024	10/04/2024
Backend Architecture Design	4 days	10/04/2024	10/04/2024
Frontend Architecture Design	6 days	10/04/2024	10/04/2024
Security Design	4 days	10/04/2024	10/04/2024
Execution			
Frontend Development	6 days	10/04/2024	10/04/2024
Backend Development	7 days	10/04/2024	10/04/2024
Integration of Backend's Frontend	4 days	10/04/2024	10/04/2024
User Acceptance Testing Submissions	4 days	10/04/2024	10/04/2024
Testing and Validation	2 days	10/04/2024	10/04/2024
Documentation and Handover	2 days	10/04/2024	10/04/2024
Evaluation			
Monitor Application Performance	2 days	10/04/2024	10/04/2024
User Feedback Collection	2 days	10/04/2024	10/04/2024
Functional Non-functional Testing	4 days	10/04/2024	10/04/2024
Address Bugs	6 days	10/04/2024	10/04/2024
Update Documentation	2 days	10/04/2024	10/04/2024
Prepare Final Project Report	6 days	10/04/2024	10/04/2024



References

React.js: React. (n.d.). *React: A JavaScript library for building user interfaces*. Available at: <https://reactjs.org/> (Accessed: 14 October 2024).

Node.js: Node.js. (n.d.). *Node.js: JavaScript runtime built on Chrome's V8 JavaScript engine*. Available at: <https://nodejs.org/> (Accessed: 14 October 2024).

Express.js: Express. (n.d.). *Express - Node.js web application framework*. Available at: <https://expressjs.com/> (Accessed: 14 October 2024).

MongoDB: MongoDB. (n.d.). *MongoDB: The developer data platform*. Available at: <https://www.mongodb.com/> (Accessed: 14 October 2024).

Sri Lankan Sports Websites:

Sri Lanka Sports Council. (n.d.). *Official Website of the Sri Lanka Sports Council*. Available at: <https://www.srilankasportscouncil.com> (Accessed: 14 October 2024).

The Papare. (n.d.). *Sri Lanka Sports News & Events*. Available at: <https://www.thepapare.com> (Accessed: 14 October 2024).

My Sports. (n.d.). *Sri Lankan sports equipment and clothing marketplace*. Available at: <https://www.mysports.lk> (Accessed: 14 October 2024).

SriLankaSports.com. (n.d.). *Your home for Sri Lanka sports news*. Available at: <http://www.srilankasports.com> (Accessed: 14 October 2024).

GitHub for Version Control: GitHub. (n.d.). *GitHub: Where the world builds software*. Available at: <https://github.com/> (Accessed: 14 October 2024).

Apache for Production: Apache. (n.d.). *The Apache Software Foundation - Open Source Software*. Available at: <https://www.apache.org/> (Accessed: 14 October 2024).