

CSN 254 - Group 18

Feasibility Study Report - Stat 11

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Our Customer

The client is a media organization specializing in cricket which focuses on covering news, updates, and analysis related to cricket matches, players, and teams. They have a significant online presence, providing cricket fans with access to the latest cricket-related content. The organization has partnerships with various Australian local cricket clubs and leagues to provide exclusive coverage and access to events.

Visibility Plan

- Communication is a crucial aspect of any software development project, and it's important to establish effective communication channels with your client to ensure that the project is completed successfully. Our Communication channels would include email, phone, and video conferencing.
- We will provide regular progress updates to the client, including project milestones, completed tasks, and any issues or challenges arising during development.
- We would gather regular feedback from the client to improve the project's quality and meet their expectations. By incorporating their feedback, we can ensure that the web application aligns with their vision and needs. This will foster a positive and collaborative relationship, leading to successful project delivery.
- To communicate among our team, we would use means such as text, phone, and mostly in-person meetings at regular intervals.

Problem Statement

The client has approached us with a software in mind that serves two main purposes. Firstly, it will provide real-time score updates to the public, helping cricket fans to stay informed about ongoing matches. Secondly, the application will offer a tool for cricket match scorers to update the scoreboard efficiently, ensuring the accuracy and speed of score updates for fans.

Requirements analysis

In terms of feasibility

I. Financial Feasibility:

Being a web application, Stat11 will have an associated hosting cost. Since it also includes chart analysis, that might lead to a slightly larger requirement of bandwidth but it would be easily fulfilled through traditional means.

The financial viability of our web application will depend on various factors such as development costs, ongoing maintenance and support costs, and revenue generation opportunities. We won't look into the following concerns at the moment. However, we will need to address them before the project is deployed for public use.

- Cost incurred for bug fixes and maintenance
- Generating revenue through subscription models, advertising, etc.

This shows that Stat11 is financially feasible.

II. Technical Feasibility:

A. Project Stat11 is a complete web application. The main technologies and tools associated with it are

1. Django Rest Framework(DRF)
2. ReactJS
3. MySQL
4. Redux Toolkit

B. Each of these technologies is freely available and the technical skills required are manageable. Time limitations of the product development and ease of implementing using these technologies are synchronized.

From these, it is clear that Stat11 is technically feasible.

III. Resource and Time Feasibility:

A. The resource and time feasibility of Stat11 refers to the availability of resources, including time, money, and human resources, required to complete the project successfully.

B. Resources required for this project:

1. Programming device (Laptop)
2. Hosting space (available)
3. Programming tools(freely available)
4. Programming individuals

Therefore this project has resource feasibility.

C. Time feasibility is determined by how much time is to be devoted in creating a detailed plan and schedule, estimating the cost of development, identifying the necessary skills and expertise required, and allocating resources accordingly. Since this is a mini-project devoting time to these aspects would not be much of an issue.

D. Effective project management, including agile development methodologies and regular monitoring of progress, can help to ensure that the project is completed on time and within budget, while also maximizing the use of available resources. As this is a mini-project, implementing techniques like agile development for Stat11 would be the same as implementing software engineering methodologies for a project very small in size.

IV. Legal Feasibility:

This Feasibility only comes into the picture when the application is ready for deployment and we decide to host it for the general public.

- Stat11 should not infringe on any intellectual property rights, including copyrights, trademarks, and patents. We will conduct a thorough search for existing intellectual property, and obtain the necessary permissions and licenses.
- Stat11 should comply with data privacy laws and regulations, such as the General Data Protection Regulation. As this is a course project, we won't be focusing on these issues at the moment. However, we will need to address them before the project is deployed for public use. This will be achieved by implementing appropriate security measures, such as encryption and two-factor authentication, and by providing users with clear and transparent information about how their data is being collected and used.

- Stat11 should not be held liable for any actions or behavior of its users. Before deployment for public use, we will include appropriate disclaimers and limitations of liability in Stat11's terms of use and privacy policy.

Suggested Deliverables

Here are some suggested deliverables for a cricket-scoring web application:

- User-friendly and intuitive interface for easy navigation.
- Real-time score updates for ongoing cricket matches.
- Accurate and up-to-date statistics on teams, players, and matches.
- Efficient scoreboard update functionality for scorers.
- Mobile responsive design for accessibility on various devices.
- Secure data storage and protection measures.
- Testing and quality assurance procedures to ensure smooth performance and bug-free user experience.
- Support for users and scorers.

These deliverables will help to ensure that Stat11 is comprehensive, user-friendly, and efficient, meeting the needs and expectations of the client and the end-users.

Development methodologies

To meet the requirements of our client, we will adopt the Agile methodology, which emphasizes collaboration, flexibility, and iterative development. In Agile methodology, the project is broken down into smaller, manageable tasks or sprints, which are completed and reviewed in cycles. This allows for frequent feedback and adjustments throughout the development process, leading to better communication, faster delivery, and improved quality of the final product. The Agile methodology prioritizes the needs of the client and the end-users, ensuring that the web application meets their requirements and expectations.

Outline Plan

1. Cricket Research

First of all we will need to do some research on cricket and its rules itself for flawless scoring software for calculating stats.

2. Scoring and Leaderboard Algorithm Research

Then with the data inputted by the user, various results such as Man of the Match, MVP of Tournament, Best Batsman, and Best Bowler must be calculated and compared accurately by the internal algorithm.

3. Wireframes

Professional level designs that can lead us up in the competition in the actual market are being designed after doing a lot of research and keeping the design theory in mind.

4. Back-end Development

The Back-end will be developed in Django Rest Framework which will be connected to the ReactJS Front-end through endpoints.

5. Front-end Development

Front-end will be developed in ReactJS which has a lot of material and tutorials already available on the web.

6. Integration

Front-end Team and Back-end Team after completing their work synchronously will sit for integration to make the whole product fully functional and user interactive.

7. Testing and Debugging

After the development is finished, and the product is integrated, The product needs to be tested well to find any bugs or vulnerabilities and those bugs must be fixed.

8. Deployment (preferably on Cloud)

We have planned to host the website on some cloud platform for wide accessibility to the daily users and customers who need it.

Risk Analysis

There are several risks associated with developing the cricket scoring web application. Some of the risks and potential problems include:

- Technical challenges such as bugs, glitches, and compatibility issues.
- Data privacy and security risks related to handling user data.
- Changes in cricket scoring rules and regulations that may affect the functionality of the application.
- The possibility of delays or changes in the project scope due to unforeseen circumstances such as the unavailability of team members, changes in the client's requirements, or unforeseen technical challenges.
- The risk of not meeting the client's expectations, resulting in a negative impact on the project's reputation and future business opportunities.

To mitigate these risks, we will have a backup plan in place. This plan will include regular communication with the client to ensure that we are aware of any changes in their requirements or expectations. We will also conduct regular testing to identify and address technical issues before they impact the application's functionality. Additionally, we will prioritize data privacy and security measures to protect user data. Finally, we will have contingency plans in place to address delays or changes in the project scope, and we will remain flexible and adaptable throughout the development process to ensure that we can meet the client's needs and expectations.

Technical Requirements

- A.** To develop Stat11, we need a team of skilled developers with expertise in web development, database management, and API integration. With few members of the team already familiar with these technologies, and rest learning along the way, we have got this base covered.
- B.** Given the growing usage of mobile devices, it is essential to make sure that Stat11 is mobile-responsive. We will use responsive design principles to optimize the user experience for mobile users.

- C.** Security is a critical aspect of any web application. We need to ensure that Stat11 is secure against common web application attacks like SQL injection, cross-site scripting, and others. As this is a course project, right now we will not trouble ourselves with these security concerns, but in later implementations of Stat11, with proper funding, we will implement security measures like user authentication, encryption, and secure coding practices.
- D.** To ensure that Stat11 is functioning correctly and to catch any bugs or errors before they reach our users, we will perform comprehensive testing and quality assurance.
- E.** For deployment purposes, initially, Stat11 will be hosted in a free web hosting space, but for later implementations, depending on the expected traffic and usage patterns, we may consider using cloud-based infrastructure for scalability and reliability. Cloud-based infrastructure services like Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform provide on-demand scaling, auto-scaling, and other features that will help Stat11 handle spikes in traffic.