**Software Requirements Specification**

**for**

**F1-Informatics**

**Version 1.0 approved**

**Prepared by Rohan, Pradhyumna, Karthik**

**04/09/2024**

**Table of Contents**

**Table of Contents ii**

**Revision History ii**

1. **Introduction 1**
   1. Purpose 1
   2. Document Conventions 1
   3. Intended Audience and Reading Suggestions 1
   4. Product Scope 1
   5. References 1
2. **Overall Description 2**
   1. Product Perspective 2
   2. Product Functions 2
   3. User Classes and Characteristics 2
   4. Operating Environment 2
   5. Design and Implementation Constraints 2
   6. User Documentation 2
   7. Assumptions and Dependencies 3
3. **External Interface Requirements 3**
   1. User Interfaces 3
   2. Hardware Interfaces 3
   3. Software Interfaces 3
   4. Communications Interfaces 3
4. **System Features 4**
   1. System Feature 1 4
   2. System Feature 2 (and so on) 4
5. **Other Nonfunctional Requirements 4**
   1. Performance Requirements 4
   2. Safety Requirements 5
   3. Security Requirements 5
   4. Software Quality Attributes 5
   5. Business Rules 5
6. **Other Requirements 5**

**Appendix A: Glossary 5**

**Appendix B: Analysis Models 5**

**Appendix C: To Be Determined List 6**

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Rohan, Pradhyumna, Karthik | 04/09/2024 | Initial Drafts | 1.0 |
|  |  |  |  |

# Introduction

## Purpose

This document specifies the software requirements for the development of the F1 Stats Tracking Website. The product aims to provide a comprehensive platform for Formula 1 enthusiasts to access and analyse driver and team statistics. This SRS covers the initial release of the website, focusing on core features such as driver and team profiles, race results, and historical data.

## Document Conventions

## This Document was created based on the IEEE template for System Requirement Specification Documents.

## Intended Audience and Reading Suggestions

**Audience:** Developers, project managers, designers, testers, and end users.

**Reading Tips:** Start with the Overview, then focus on System Features and Nonfunctional Requirements.

## Product Scope

The F1 Stats Tracking Website is designed to consolidate and present Formula 1 data from multiple sources. It aims to enhance user engagement by providing detailed driver and team statistics, race results, and historical performance metrics. The website will offer a user-friendly interface and scalable features to accommodate future enhancements such as fantasy leagues and interactive race calendars.

## References

 Formula 1 Official Website: [www.formula1.com](http://www.formula1.com)

# Overall Description

## Product Perspective

The F1 Stats Tracking Website is a new, self-contained product designed to serve as a central resource for Formula 1 statistics. It will integrate data from various sources and provide a seamless experience for accessing and analysing F1 performance metrics. The system will be developed using modern web technologies and will be scalable to accommodate future enhancements.

## Product Functions

 **Data Aggregation:** Consolidates F1 data from multiple reliable sources.

 **Driver and Team Profiles:** Displays detailed career statistics, race results, and historical achievements.

## User Classes and Characteristics

 **Casual Fans:** Access basic statistics and race results. Users prefer a straightforward interface with quick access to essential data.

 **Dedicated Fans:** Seek detailed performance metrics, historical data.

 **Data Analyst**

## Operating Environment

 **Hardware Platform:** Web servers with sufficient capacity for data processing and user traffic.

 **Operating System:** Compatible with major operating systems (e.g., Windows, macOS, Linux).

 **Software Components:** Modern web development frameworks and database systems.

## Design and Implementation Constraints

 **Corporate Policies:** Compliance with data protection regulations (e.g., GDPR).

 **Hardware Limitations:** Scalability considerations for handling large volumes of data.

 **Technologies:** Use of specific web technologies and databases as outlined in the development plan.

## User Documentation

Using our F1 statistics tracking website is simple and intuitive. Start by visiting the site in your browser, where you can immediately explore a range of data including driver and team profiles, race results, and historical statistics.

## Assumptions and Dependencies

 **Assumptions:** Reliable data sources and technological feasibility for advanced features.

 **Dependencies:** Collaboration with data providers, secure hosting, and ongoing support for the platform.

# External Interface Requirements

## User Interfaces

The website will follow established GUI standards with an intuitive layout, standard buttons, and error message display

## Hardware Interfaces

The platform will interact with web servers and user devices via standard communication protocols.

## Software Interfaces

Integration with external data sources through APIs. The platform will interact with databases for data storage and retrieval, and ensure compatibility with major web browsers (e.g., Chrome, Firefox).

## Communications Interfaces

The website will use HTTP/HTTPS for web communications. Data transfer rates and synchronization mechanisms will be optimized for performance and reliability.

# System Features

**4.1 System Feature 1: View Driver Profiles**

**4.1.1. Description and Priority:** Provides detailed profiles for F1 drivers, including career stats, recent performance, and key achievements. **Priority:** High

**4.1.2. Stimulus/Response Sequences:**

* **Stimulus:** User selects a driver from the list.
* **Response:** The system displays the driver's profile with detailed career statistics, recent race results, and notable achievements.

**4.1.3. Functional Requirements:**

* REQ-1.1: Display comprehensive career statistics and recent performance for each driver.
* REQ-1.2: Include a section for notable achievements and awards.

**4.2. System Feature 2: View Team Profiles**

**4.2.1. Description and Priority:** Allows users to view detailed information about F1 teams, including team history, performance stats, and key personnel. **Priority:** High

**4.2.2. Stimulus/Response Sequences:**

* **Stimulus:** User selects a team from the list.
* **Response:** The system shows the team’s profile with historical performance, key personnel, and team statistics.

**4.2.3. Functional Requirements:**

* REQ-2.1: Provide historical performance data and team statistics.
* REQ-2.2: Include profiles of key team members and their roles.

**4.3. System Feature 3: View Race Results**

**4.3.1. Description and Priority:** Displays results for recent and historical F1 races, including race positions and lap times. **Priority:** High

**4.3.2. Stimulus/Response Sequences:**

* **Stimulus:** User selects a specific race from the calendar.
* **Response:** The system displays the race results, including final positions and lap times for all drivers.

**4.3.3. Functional Requirements:**

* REQ-3.1: Show detailed results including positions, lap times, and driver performance.
* REQ-3.2: Allow users to view results for both current and past races.

**4.4. System Feature 4: View Season Standings**

**4.4.1. Description and Priority:** Provides current standings for drivers and teams throughout the F1 season, updated in real-time. **Priority:** High

**4.4.2. Stimulus/Response Sequences:**

* **Stimulus:** User navigates to the season standings page.
* **Response:** The system displays up-to-date standings for drivers and teams, with points and rankings.

**4.4.3. Functional Requirements:**

* REQ-4.1: Display current season standings with rankings and points for both drivers and teams.
* REQ-4.2: Update standings in real-time following each race.

**4.5. System Feature 5: Access Historical Data**

**4.5.1. Description and Priority:** Allows users to explore historical F1 data, including past race results, driver and team performance over previous seasons. **Priority:** Medium

**4.5.2. Stimulus/Response Sequences:**

* **Stimulus:** User requests access to historical data.
* **Response:** The system provides access to a database of past race results and performance metrics.

**4.5.3. Functional Requirements:**

* REQ-5.1: Users must be able to filter and search historical data by season, driver, or team.
* REQ-5.2: Display historical performance metrics and results in an accessible format.

**4.6 System Feature 6: Track Race Calendar**

**4.6.1. Description and Priority:** Displays an interactive calendar of upcoming F1 races, with dates, times, and locations. **Priority:** High

**4.6.2. Stimulus/Response Sequences:**

* **Stimulus:** User selects "Race Calendar" from the menu.
* **Response:** The system presents an interactive calendar with details on upcoming races.

**4.6.3. Functional Requirements:**

* REQ-6.1: Show all upcoming races with their dates, times, and locations.
* REQ-6.2: Allow users to view race details by selecting specific calendar dates.

**4.7. System Feature 7: View Track Information**

**4.7.1. Description and Priority:** Provides detailed information about each race track, including layout, history, and statistics. **Priority:** Medium

**4.7.2. Stimulus/Response Sequences:**

* **Stimulus:** User selects a track from the list.
* **Response:** The system displays detailed information about the track, including layout diagrams and historical data.

**4.7.3. Functional Requirements:**

* REQ-7.1: Provide detailed track information including layout, history, and key statistics.
* REQ-7.2: Include visual aids such as track diagrams and maps.

**4.8. System Feature 8: View Highlights**

**4.8.1. Description and Priority:** Displays video highlights of races and key moments, allowing users to watch or review exciting events. **Priority:** Medium

**4.8.2. Stimulus/Response Sequences:**

* **Stimulus:** User selects "Race Highlights" from the menu.
* **Response:** The system presents a list of video highlights for recent races or key moments.

**4.8.3. Functional Requirements:**

* REQ-8.1: Provide access to video highlights of races and significant events.
* REQ-8.2: Allow users to view, pause, and rewind highlights as needed.

These features cover the core functionalities needed to meet the use cases described, providing a comprehensive view of F1 data and enhancing the user experience.

# Other Nonfunctional Requirements

## Performance Requirements

 **Response Time:** Web pages should load within 3 seconds.

 **Scalability:** The system must handle increasing user traffic and data volume efficiently.

## Safety Requirements

 **Safeguards:** Implement measures to prevent data loss and ensure system reliability.

 **Certifications:** Comply with industry standards for data protection and software safety

## Software Quality Attributes

 **Reliability:** Ensure system uptime and availability.

 **Usability:** Design an intuitive and user-friendly interface.

 **Maintainability:** Implement clear coding practices and documentation for future maintenance.

## Business Rules

 **Access Control:** Define user roles and permissions for accessing various features.

 **Data Accuracy:** Ensure the accuracy and timeliness of F1 statistics.

# Other Requirements

 **Database Requirements:** Implement a robust database schema for storing and querying F1 data.

 **Internationalization:** Support for multiple languages and regional settings as needed.

# Appendix: Glossary

 **F1:** Formula 1, a premier international motor racing sport.

 **API:** Application Programming Interface, a set of functions and protocols for accessing the website’s features.

 **UI:** User Interface, the visual elements through which users interact with the platform.

 **UX:** User Experience, the overall experience and satisfaction a user has with the website.

 **GDPR:** General Data Protection Regulation, a regulation in EU law on data protection and privacy