
Software Requirements Specification

for

Professor Plotter

Version 1.0

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

*This document outlines the software requirements for version 1.1 of Professor **Plotter**. It specifies the scope of the system, focusing on managing and displaying professor details within an educational institution. This includes features for retrieving, sorting, and filtering professor data based on various attributes.*

1.2 Document Conventions

Requirement ID: Each requirement statement is assigned a unique ID that follows a standard format, such as REQ-001, REQ-002, and so on.

Priority: Each need statement has a different priority level that shows its importance.

Traceability: Each demand statement is linked to its source, which might be a stakeholder or a business goal. Furthermore, each demand is related to other requirements on which it depends or is dependent.

Typographical Conventions: The SRS use bold and italics text to emphasize significant concepts or terminology, and bullet points to enumerate criteria and other specifics.

Formatting: The SRS adheres to a standard formatting style, which includes margins, space, font type, and font size

1.3 Intended Audience and Reading Suggestions

The intended audience for this document includes developers, designers, testers, project managers, and stakeholders involved in the development and deployment of Professor Plotter. Readers are suggested to familiarize themselves with the functionalities and requirements of an e-commerce application.

1.4 Product Scope

Plotter is a web-based platform designed to streamline the process of finding and reviewing professors for students. Its purpose is to provide users with a centralized hub for accessing and sharing professor cabin locations designed especially for FRESHERS. By offering a user-friendly interface and collaboration features, Plotter aims to enhance the academic experience for students while supporting educational institutions' goals of fostering transparency and accountability in faculty evaluation.

1.5 References

MySQL: <https://www.mysql.com/>

Node.js: <https://nodejs.org/>

Express.js: <https://expressjs.com/>

VS Code: <https://code.visualstudio.com/>

W3Schools: <https://www.w3schools.com/>

ChatGPT: <https://openai.com/chatgpt/>

HTML and CSS: <https://www.w3.org/standards/webdesign/htmlcss>

Flutter: <https://flutter.dev/>.

2. Overall Description

2.1 Product Perspective

Professor Plotter stands as an independent platform for students to explore the campus. It's a self-contained solution, distinct from existing systems, designed to empower users with informed academic decisions through comprehensive professor reviews and discovery functionalities.

2.2 Product Functions

Professor Search: Users can search for professors by name, department, or university.

User Profiles: Users can create profiles to track their reviews and contributions.

Filtering Options: Users can filter search results based on criteria such as overall rating, department, or specialization.

Anonymous Reviews: Users have the option to submit reviews anonymously to encourage honest feedback.

Moderation Tools: Administrators can moderate reviews to ensure accuracy and prevent abuse.

Notification System: Users receive notifications when their reviews are published or when there are updates on discussions they are involved in.

Mobile Compatibility: The platform is accessible on both desktop and mobile devices for user convenience.

2.3 User Classes and Characteristics

- *Customers: Students who browse and search for professor.*

- *Administrators: Users responsible for managing and storing their current cabin location of all professors.*

2.4 Operating Environment

Hardware Platform:

Desktop Computers: *Intel Core i5 or equivalent processor, 8GB RAM, 256GB SSD or higher recommended.*

Mobile Devices: *Compatible with iOS and Android smartphones and tablets with modern web browsers.*

Operating System:

Windows 10 or later

macOS Catalina (10.15) or later

Ubuntu 20.04 LTS or later

Android 8.0 (Oreo) or later

iOS 12.0 or later

Dependencies:

Node.js runtime environment (version 14.x or later)

Express.js web application framework (version 4.x or later)

MySQL relational database management system (version 8.x or later)

Development Tools:

Visual Studio Code or any compatible code editor for software development.

Git version control system for code management and collaboration.

MySQL Workbench or similar database management tool for database administration.

HTML, CSS, and JavaScript for frontend development

2.5 Design and Implementation Constraints

For Professor Plotter, developers may face limitations such as corporate policies, regulatory requirements, hardware constraints, integration dependencies, technology mandates, language preferences, communication protocols, security standards, design conventions, and maintenance responsibilities. These factors influence technology choices, development approaches, and architecture decisions.

2.6 User Documentation

MySQL: <https://www.mysql.com/>

Node.js: <https://nodejs.org/>

Express.js: <https://expressjs.com/>

VS Code: <https://code.visualstudio.com/>

W3Schools: <https://www.w3schools.com/>

ChatGPT: <https://openai.com/chatgpt/>

HTML and CSS: <https://www.w3.org/standards/webdesign/htmlcss/>

Flutter: <https://flutter.dev/>

2.7 Assumptions and Dependencies

Assumptions:

Users have access to a stable internet connection for accessing the Professor Plotter platform.

Professors listed on the platform have consented to being reviewed by users.

Users will provide honest and constructive feedback in their reviews.

Administrators will actively moderate reviews to ensure accuracy and prevent abuse.

The platform will comply with relevant data privacy regulations, such as GDPR.

Dependencies:

Availability of reliable web hosting services for hosting the Professor Plotter application.

Integration with external APIs or databases for retrieving and displaying professor information.

Dependence on web technologies such as HTML, CSS, JavaScript, Node.js, Express.js, and MySQL for development.

Adherence to design and coding standards established by the project team or client organization.

Availability of skilled developers and resources for timely development and maintenance of the platform.

3 External Interface Requirements

3.1 User Interfaces

Homepage: The homepage serves as the entry point for users and provides an overview of the platform's features. It may include search functionality, featured professors, and recent reviews.

Professor Search Interface: This interface allows users to search for professors by name, department, university, or other criteria. Search results should be displayed in a user-friendly manner, with options for filtering and sorting.

Professor Profile Page: Each professor has a dedicated profile page displaying their information, including name, department, university, and possibly a photo.

Contact Us Page: This page allows users to reach out to the platform administrators or support team with inquiries, feedback, or issues. It typically includes a contact form with fields for name, email address, subject, and message.

My Team Page: This page showcases the team behind Professor Plotter, including developers, designers, administrators, and any other contributors. It may include profiles or bios of team members, along with their roles and responsibilities.

3.2 Hardware Interfaces

Web Browser Compatibility: Ensure compatibility with various web browsers on different devices.

Responsive Design: Design interfaces to adapt to different screen sizes and resolutions.

Input Devices: Support interaction with keyboards, mice, touchscreens, etc.

Internet Connection: Depend on a stable internet connection for access.

3.3 Software Interfaces

Frontend-Backend Interface: User interface interaction with server.

API Interface: Endpoints for external system access.

Database Interface: Data interaction with the database.

Third-Party Integrations: Integration with external services.

Admin Interface: Interface for platform management.

Error Handling Interface: Handling system errors.

Security Interface: Implementation of security measures.

4 System Features

Faculty Login and Authentication

The Faculty Authentication feature is a fundamental aspect of Professor Plotter, prioritizing the security and confidentiality of faculty member accounts. It serves as the gateway for faculty members to access their personalized features and interact with the platform securely.

Stimulus: Faculty member submits their login credentials.

Response: The system employs robust validation mechanisms to authenticate the credentials, ensuring only authorized access to faculty accounts. In case of incorrect credentials, informative error messages are displayed to enhance security.

Functional Requirements:

REQ-1: Implement a user-friendly login interface for faculty members, facilitating easy access to the platform.

REQ-2: Validate login credentials against stored data in the database, employing encryption techniques to safeguard sensitive information.

REQ-3: Enhance user experience by providing clear feedback on login attempts, guiding users in resolving any issues encountered during authentication.

REQ-4: Implement security measures such as account lockout mechanisms and CAPTCHA verification to mitigate potential security threats like brute-force attacks.

The Faculty Authentication feature plays a pivotal role in upholding the integrity and security of Professor Plotter, ensuring a seamless and secure experience for faculty members accessing the platform.

Description and Priority

The Faculty Authentication feature ensures secure access for professors, prioritizing the integrity of user accounts and platform security. It streamlines the login process, enhancing user satisfaction and trust in the platform's reliability.

Stimulus/Response Sequences:

Logging In:

Stimulus: Faculty member navigates to the login page.

Response: System prompts the faculty member to enter their credentials.

Authentication: Stimulus: Faculty member submits their credentials.

o Response: System verifies the credentials and grants access upon successful authentication

• Accessing Dashboard:

o Stimulus: Authenticated faculty member is redirected to their dashboard.

o Response: System displays personalized information and features based on the faculty member's role and permissions.

5 Other Nonfunctional Requirements

5.1 Performance Requirements

Plot Rendering Time: Plotter should render plots and charts within 2 seconds for standard data sets to ensure a responsive user experience.

Concurrent User Handling: Plotter should support at least 100 concurrent users without significant degradation in performance during peak usage periods.

Data Import Speed: Plotter should import and process large datasets (up to 10,000 data points) for plotting within 5 seconds to facilitate efficient data visualization.

Real-Time Collaboration: Plotter's real-time collaboration feature should have a latency of less than 1 second to ensure smooth interaction between users working on the same plot simultaneously.

API Response Time: Plotter's API endpoints should respond to requests within 100 milliseconds to enable seamless integration with external systems and applications.

These performance requirements aim to ensure that Plotter meets user expectations for speed, responsiveness, and scalability, thereby enhancing overall user satisfaction and productivity.

5.2 Safety Requirements

Caution should be taken to make that the frameworks used, such as Express and Node.js, are up-to-date and maintained. Compatibility with the latest versions should be verified to mitigate potential vulnerabilities. Also MySQL/Oracle database should have correct root passwords and login IDs for proper connectivity.

5.3 Security Requirements

All sensitive data, including login information of teachers, booking details, must be encrypted both in transit and at rest using industry-standard encryption algorithms.

Reason: Encryption ensures that sensitive data remains protected from unauthorized access or interception, reducing the risk of data breaches or leaks.

User access to the system must be controlled through role-based access control (RBAC), where permissions are granted based on the user's role and responsibilities.

Reason: Limiting access to authorized users helps prevent unauthorized access to sensitive information and functionalities, reducing the risk of data misuse or tampering.

5.4 Software Quality Attributes

1. Usability and User-Friendliness: The system should be designed for ease of use, with an intuitive interface, straightforward navigation, and clear guidance for users.

2. Dependability and Reliability: The system should minimize downtime and errors, with robust mechanisms to quickly recover from failures, ensuring consistent and reliable service.

3. Authentication and Authorization: Proper user authentication and authorization mechanisms should be in place to control access and protect sensitive data, ensuring secure interactions within the system.

5.5 Business Rules

Professors must have unique identifiers (IDs). Each professor can have multiple reviews.

Data Confidentiality:

All user data and sensitive information collected by the platform must be kept confidential and used only for authorized purposes in accordance with privacy policies and regulatory requirements.

Reason: Protects user privacy rights and maintains trust in the platform's handling of sensitive information, mitigating risks of data breaches or misuse.

Users can only edit or delete their own reviews. Administrators can moderate reviews for accuracy.

Appendix A: Glossary

SRS: Software Requirements

MySQL: A popular open-source relational database management system (RDBMS) that uses SQL (Structured Query Language) for managing and manipulating data.

VSCode: Visual Studio Code

HTTP (Hypertext Transfer Protocol) The protocol used for transferring hypertext requests and information on the World Wide Web.

HTTPS (Hypertext Transfer Protocol Secure): The secure version of HTTP that encrypts data exchanged between the client and server.

Flutter: A UI toolkit developed by Google

GUI: Graphical User Interface

GHz: Gigahertz

GB: Gigabytes

ID: Identification

Appendix B: Analysis Models

To be submitted later

Appendix C: To Be Determined List

Entity-Relationship Diagrams