This is an SRS document for the Student and Faculty Project Team Matching System (SFPTMS). Where individuals will be matched based on skills, interests, and availability, improving project team formation and enhancing the overall collaborative experience.

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1. Introduction

1.1 Purpose

The purpose of this document is to define the requirements for the Student and Faculty Project Team Matching System (SFPTMS). This document serves as a reference and a guide for all stakeholders involved in the development and use of the SFPTMS, including administrators, faculty members, students, and developers.

Developers are required to adhere to the specifications provided in this document and any subsequent revisions. Any features or changes to the system should be based on the requirements specified here.

1.2 Scope

The proposed software product, the Student and Faculty Project Team Matching System (SFPTMS), is a platform designed to facilitate collaboration and project team formation within higher education institutions. The system will enable students and faculty members to discover and connect with one another based on their specific skills, interests, and project requirements. The current manual or ad-hoc processes for team formation are often inefficient and lack a systematic approach.

The SFPTMS aims to streamline this process, fostering cross-disciplinary cooperation, optimizing resource utilization, and enhancing the overall project experience for students and faculty members. The requirements presented in this document encompass both functional and non-functional aspects of the system.

1.3 Definitions, Acronyms, and Abbreviations

- **SFPTMS:** Student and Faculty Project Team Matching System
- **User:** Refers to individuals using the SFPTMS, including administrators, faculty members, and students.
- **Project:** Denotes collaborative projects, research initiatives, or mentorship opportunities within the context of higher education.
- **Skills:** Specific competencies and expertise possessed by users.
- **SRS:** Software Requirements Specification

1.4 References

No formal documents have been referenced in this document

1.5 Overview

This SRS document serves as a comprehensive guide to the requirements for the SFPTMS, covering a range of aspects such as functional and non-functional requirements, business rules, and constraints. The document aims to formalize the high-level system requirements to provide clarity for both the development team and stakeholders.

The structure of this document is organized as follows:

- Section 2 provides a high-level description of the business domain that the SFPTMS will support. This includes a general product overview, user characteristics, general constraints, and key assumptions. This section sets the context for the development team to understand the business domain and align the system with the institution's needs.
- Section 3 delves into the detailed system requirements, which will define the system's functionality, behaviour, and constraints.

2. General Description

2.1 Product Perspective

The Student and Faculty Project Team Matching System (SFPTMS) operates as an independent, self-contained system tailored for higher education institutions. It does not rely on external systems for its core functionality.

2.2 Product Functions

The SFPTMS performs a set of essential functions designed to support the following processes:

- **User Registration (SRS001):** Users, including students and faculty members, can register on the platform. During registration, their essential information, such as name, contact details, department, and skills, is entered into the system. Users are also required to create a username and password for access.

- **Project Listing and Management (SRS002):** The system allows users, primarily faculty members, to create and manage project listings. Project details such as project title, description, required skills, and duration are included. Faculty members may also specify whether they are looking for students to join their projects or if they are available to mentor students on their own projects.

- **Skill-Based Matching (SRS003):** The SFPTMS employs algorithms to match students with relevant projects based on their skills, department, and academic interests. Faculty members are also matched with students whose skills and interests align with their project requirements.

- **Communication for Collaboration (SRS004):** Users can communicate with each other within the platform. This communication includes expressing interest in a project, seeking clarification, and discussing collaboration details.

2.3 User Characteristics

The SFPTMS is primarily intended for use within the higher education institution setting, and its main user categories are:

Administrators:
These users have responsibilities related to managing the system. They may include IT administrators or support staff. Administrators are expected to have post-secondary education and basic computer training.

Faculty Members:
Faculty members are typically experienced educators and researchers within the institution. They create and manage projects, mentor students, and have varying levels of computer literacy.

Students:
Students are enrolled in academic programs within the institution. They use the system to find projects and faculty mentors. The user population may vary in terms of computer literacy.

2.4 General Constraints

Several constraints and conditions apply to the SFPTMS:

- **Delivery Deadline (SRS005):** The system must be delivered and operational by a 22 November, 2023 to meet institutional requirements.

- **Networking Standards (SRS006):** The SFPTMS must adhere to existing networking standards within the institution, including IEEE 802.3, using Category 5 cables for networking.

- **User-Friendly Design (SRS007):** The system is required to be user-friendly, ensuring that all users can navigate and utilize the platform effectively.

2.5 Assumptions and Dependencies

- It is assumed that there will be adequate availability of compatible computers to support the system before installation and testing.

- Assumption is made that the institution will have the necessary trained staff available to manage and support the system, including administrative and IT support.

3. Specific Requirements

3.1 Functional Requirements

Matching and Collaboration

- **SRS009 User Registration (Student)**: The SFPTMS shall allow students to create profiles, providing personal information and skills for project matching.

- **SRS010 User Registration (Faculty)**: Faculty members can create profiles specifying their areas of expertise and interests for project collaboration.

- **SRS011 Project Creation**: Faculty members can create and submit project listings, including project titles, descriptions, requirements, and duration.

- **SRS012 Project Matching**: The system shall match students with suitable projects based on their skills and interests.

- **SRS013 Expression of Interest**: Students can express their interest in specific projects, initiating contact with faculty members.

- **SRS014 Communication**: The SFPTMS shall enable project team members to communicate and collaborate within the platform.

- **SRS015 Team Formation**: Faculty members can select students to form project teams.

3.2 Design Constraints

- **SRS016 Database**: The system shall use a relational database management system (RDBMS) for data storage and retrieval.
- **SRS017 Web-Based**: The SFPTMS will be designed as a web-based application, accessible through standard web browsers.
- **SRS018 Hosting and Scalability**: The system shall be hosted on a scalable infrastructure to accommodate increased usage.

3.3 Non-Functional Requirements

3.3.1 Usability and User Experience

- **SRS019 User-Friendly Design**: The SFPTMS shall feature an intuitive, user-friendly interface with clear navigation and minimal learning curve.
- **SRS020 Accessibility**: The system shall conform to accessibility guidelines, ensuring that it is usable by individuals with disabilities.

3.3.2 Security

- **SRS021 User Authentication**: Users shall be required to authenticate themselves through secure login credentials.
- **SRS022 Data Protection**: The SFPTMS shall implement encryption and access control mechanisms to safeguard user data.

3.3.3 Performance

- **SRS023 Response Time**: The system shall provide quick responses, with page loads and actions completing within 2 seconds.
- **SRS024 Scalability:** The SFPTMS shall be designed to accommodate up to 10,000 concurrent users without significant performance degradation.

3.3.4 Maintenance

- **SRS025 Data Backup:** The system shall support automated data backup processes to ensure data integrity.

- **SRS026 Logging:** All user interactions and system events shall be logged for auditing and debugging purposes.

3.3.5 Reliability

- **SRS027 Availability:** The SFPTMS shall maintain a minimum of 99.9% uptime to ensure constant availability to users.

- **SRS028 Error Handling:** The system shall gracefully handle errors and provide clear error messages to users.

4 Conclusion

This SRS document provides a comprehensive overview of the Student and Faculty Project Team Matching System (SFPTMS). It outlines the functional and non-functional requirements essential for the development of a dynamic platform that streamlines collaboration within higher education institutions. The SFPTMS is poised to enhance project team formation, improve research initiatives, and facilitate mentorship programs by efficiently connecting students and faculty members. The specification of these requirements ensures a clear path for the project's development, aligning with the mission of creating a collaborative and innovative academic environment.