Software Requirements Specification

for

Mini Project Management Software

Version 1.0 approved

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1. Introduction

1.1 Purpose

This SRS describes the software functional and nonfunctional requirements for release 1.0 of the mini project management system (mpms). It describes scope of the system, both functional and non-functional requirements for the software, design constraints and system interfaces.

1.2 Project Scope and Product Features

The Project Management System addresses the management of software projects. It provides the framework for organizing and managing resources in such a way that these resources deliver all the work required to complete a software project within defined scope, time and cost constraints.

The Project Management System serves as a central hub for planning, executing, and tracking software projects. It fosters collaboration among project stakeholders, enabling effective communication and decision-making. Additionally, it facilitates the efficient allocation of resources, ensuring that tasks are assigned to the right team members with the necessary skills and expertise.

The Project Management System not only streamlines project execution but also supports comprehensive project documentation and reporting. It maintains a detailed project history, including task progress, milestones achieved, and any changes made to the project scope, ensuring transparency and accountability throughout the project's lifecycle.

2. Overall Description

2.1 Product Perspective

PMS it a standalone system that provides functionality described in the Product functions section. It includes all subsystems needed to fulfil these software requirements. The Mini Project Management System (MPMS) represents a transformative approach to project management within organizations. It stands as a novel system that aims to replace traditional, manual project management processes. It is designed to replace disparate tools and methods, fostering a more streamlined and efficient approach to project planning, execution, and collaboration. While release 1.0 primarily focuses on core project management functionalities, subsequent releases are anticipated to expand its capabilities.

These future releases may include integrations with external services, such as cloud-based project management tools, collaboration platforms, and reporting services, enhancing the system's functionality. The MPMS is envisioned to evolve progressively, aligning with emerging project management trends and technologies

2.2 User Classes and Characteristics

The system is intended to be used by various users. We can divide all users into four profiles, each with own responsibility and role in the PMS:

Manager: Responsible for the batch of the projects and controls overall development flow. Assigns projects to the project team leader and controls fulfilment of the project team leader's tasks

Project Team Leader: Responsible for a particular project. Leads a project team of 2 to 20 developers. Assigns tasks to project team members and controls their fulfilment. Reports to the manager.

Project Team Member: Responsible for a particular task or part of a task. Reports to the Project Team Leader.

System Administrator: Responsible for the installation, maintenance, security and troubleshooting of the productive system. Manage users of the PMS. Reports to the Manager

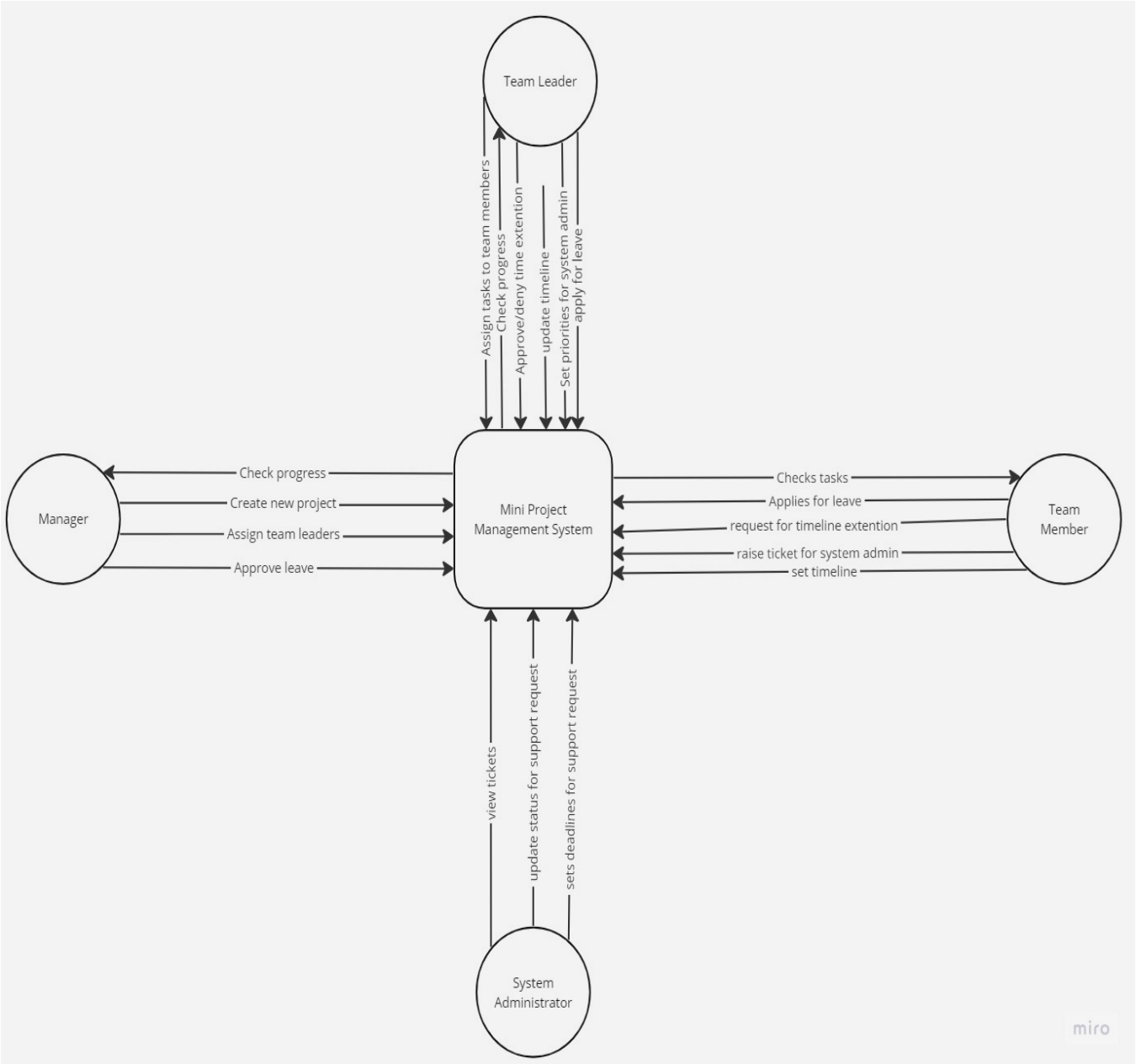

Fig: Use case diagram for Mini Project Management Software

2.3 Operating Environment

OE-1: The Mini Project Management Software (MPMS) shall be compatible with modern web browsers commonly used in corporate settings, including but not limited to Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari. Compatibility testing should be performed to ensure smooth operation on the latest versions of these browsers.

OE-2: The system will need to run on a web server and will require a database to store data. The software requirements will also depend on the specific features that are needed.

OE-3: The system shall be designed to accommodate potential future integration with third-party tools, services, and APIs, ensuring flexibility and scalability.

OE-4: The system shall be designed to accommodate potential future integration with third-party tools, services, and APIs, ensuring flexibility and scalability.

2.4 Design and Implementation Constraints

CO-1: The system shall use mysql database engine.

CO-2: All HTML code shall conform to the HTML 5.0 standard

CO-3: All scripts shall be written in python/streamlit/flask.

CO-4: The system shall implement role-based access control (RBAC) to ensure that users have appropriate permissions based on their roles within the organization.

2.5 Assumptions and Dependencies

Assumptions

AS-1: The organization will have project managers, team leaders, team members, and administrators who will use the mini project management system for project planning, execution, and monitoring.

AS-2: Users have access to the internet to log in and use the system.

AS-3: Users are expected to have a basic understanding of project management concepts and practices.

AS-4: Users are responsible for maintaining the confidentiality and security of their login credentials.

AS-5: Hardware and Infrastructure Availability, it is assumed that the necessary hardware and infrastructure resources, including servers, databases, and network components, are available and provisioned according to project requirements.

Dependencies

DE-1: The operation of the mini project management system depends on the availability of relevant project data, including project descriptions, task details, and user profiles.

DE-2: The availability and compatibility of web browsers, both on desktop and mobile devices, are dependencies for users.

DE-3: The implementation of security features and encryption protocols is a dependency to protect user data and ensure secure data transmission.

3. External Interface Requirements

3.1 User Interface

UI-1: The mini project management system's user interfaces shall follow a responsive design approach, ensuring compatibility with various devices and screen sizes.

UI-2: The mini project management system shall feature a dashboard that provides users with an overview of their active projects, tasks, and upcoming milestones upon login.

UI-3: The mini project management system shall include a calendar view that displays project milestones, deadlines, and team member schedules, providing an at-a-glance overview of project timelines.

UI-4: The system shall offer a search functionality that enables users to quickly locate specific projects, tasks, or project team members within the system.

UI-5: Users shall have the option to export project data and reports in common formats (e.g., PDF, Excel) for offline reference and sharing with stakeholders.

3.2 Hardware Interface

No hardware interfaces have been identified.

3.3 Software Interface

SI-1: The mini project management system shall provide APIs to allow integration with other tools or systems, such as calendars.

SI-2: Verify user login credentials and grant access to authorized users based on their roles within the organization.

SI-3: Send automated project notifications and email alerts to users based on predefined triggers and events.

3.4 Communication Interfaces

CI-1: The mini project management system shall send email notifications to project team members to confirm task assignments, project updates, and deadlines.

CI-2: The mini project management system shall send email notifications to project stakeholders to report any critical project issues, delays, or changes in project status.

CI-3: The system shall support real-time chat or messaging features to enable team members and leaders to communicate within the system.

4. System Features

4.1 Functional Requirements

User roles: The system shall support the concept of user role. The role has the unique name within the installed instance of the system and a set of permissions that are assigned to this role. The permission determines explicitly what the user belonging to this role allowed to do in the system. Every user of the system must be associated with at least one of the roles. The user can belong to many roles.

User profile: The system shall provide the concept of User Profile. The user profile contains the user-specific configurable parameters of the system. The user profile is associated with one and only one user that is registered in the system (has a user name and a password).

System login: The user must login to the system by specifying his or her name and password before he or she can work with the system. After successful login the system shall associate the user with the user roles and configure appearance of GUI according the user profile. After the login the main functionality of the system according the user's permissions is available.

Manage Project List: The system shall provide the authorized user with permission "view project list" the ability to view and browse the list of all projects of the current project portfolio.

Manage Project Leader: Under the condition that the user has permission "edit project", the user must be able to assign or re-assign any of available users to the Project Leader property of the project. The user can be associated with any number of projects, but project can be associated only with one user.

Manage project: The project has properties and contains zero or more tasks. The project must belong to one and only one project portfolio. The properties of the project are: Name, Description, Status, Creation Date, Start Date, Finish Date, Owner, and Project Leader.

4.2 Non-functional Requirements

Performance: The system shall provide responsive user interfaces, with page load times of no more than 2 seconds. The system shall handle concurrent user sessions with a capacity to support at least [specific number] simultaneous users without degradation in performance.

Security: User authentication shall use secure protocols to protect user data during login.

Requirement 4.1: Data transmission shall be encrypted using industry-standard encryption protocols (e.g., TLS/SSL).

Requirement 4.2: The system shall implement role-based access control (RBAC) to restrict user access to specific features and data.

Requirement 4.3: Audit logs shall be maintained to track user activities and security-related event