System Requirement Specification(SRS)

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2. Introduction

This document describes the software system's Introduction, functional and non-functional requirements for the Software Management Tool which is the a project under software project management course.
The purpose of this document is to define the requirements gathering process used to elicit requirements from the product stakeholders, to define the overall vision and goals of this new product, and to list those functional and non-functional requirements that are essential to the success of this product.
This document was prepared with the understanding that establishing the proper vision and project objectives of any new software product and the proper documentation of a consistent, robust, well understood, and complete set of functional and non-functional requirements is essential for product success.

3. Problem Statement

Generally project teams find difficulty in managing the project manually. The intangible nature of software creates difficulty in tracking how much the project is behind schedule and which employee is doing efficient work and which one is non conforming. Moreover project scheduling planned by project manager very often seems to be inaccurate with the progress of project and therefore the cost of project increases manifold and completes after very long time of predecided time.

4. Scope of Project

The Project Management Tool 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 system applies only to the management of software projects and is a tool that facilitates decision making; the PMT does not make decisions.

This SRS describes only required functionality of PMT, not the functionality of external systems like data storage, change management or version control systems.

This document does not divide the PMT into subsystems; it describes only requirements for the whole- system functionality which is defined in the use case model.

5. Overall Description

5.1. Solution : The tool is meant for the teams who are indulged in developing the software project and managing the whole development processes. The software purely focuses upon maintaining the project schedule, to organize the tasks of the project and to physically input the all project data.

5.2. Product Functions

The Project Management System :

- ✔ Provides a framework for project management.
- ✔ Supports multiple projects.
- ✔ Supports distributed development.
- ✔ Allows Planning and scheduling of the project.
- ✔ Allows to define fine-grained project step like tasks and subtasks.
- ✔ Allows to create complex dependencies between tasks.
- ✔ Supports resource management.
- ✔ Supports cost estimation and budget controlling.
- ✔ Stores all system data in the centralized data storage,
- ✔ Has an interface to an external version management and code storage system.
- ✔ Can have an interface with enterprise-wide user management system.
- ✔ Provides evaluation scheme for the project team members working on a project.

The Project Management System :

- ✔ Does not provide code management or code storage.
- ✔ Does not provide bug tracking and change management.
- ✔ Does not provide employee management.

5.3. User Profiles

Role	**Functions and Responsibility**
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.

5.4. Use Cases : Use Case model defines the users of the system (actors) and specifies the activities performed by a particular type of user. The use case model is decomposed into functional areas and each functional area comprises use cases. Each use case describes how the system shall be used by the actors to achieve a specific business goal or function.
The use cases do not capture non-functional requirements of the system. In writing use cases we use only minimal level of details: a brief use case. It consists of a few sentences summarizing the use case.
It is not intended to specify the PMS requirements in term of the defined use cases. The use cases serves only for decomposing the whole system into functional areas

6. Goals and Objectives

Goals and Objectives of the project are listed below:

- To enable any project team to automate the activities attached with software project management.
- To enable the project manager to track every employee's work and judge on the basis of quality of work done and submissions done on time.
- To enable the project manager to plan the project in an efficient way i.e. without manually assigning duration and resources to milestones, calculate the time depending upon the skill set and resources available.
- To narrow the communication gap withing the team.
- To monitor the project in an veracious way.
- Estimate the estimated cost of project in person month and also calculate the range of development time of project.
- Help the project manager in personnel selection.
- Manage documents involved in the project and track the name of submitter and date of submission for efficient project montoring.
- Rate the employees by colleagues and by the project manager depending upon the performance in the tasks assigned.

7. Functional Requirements

7.1. Authentication

7.1.1 Employee Login : The software can only be used after an employee enters the individual credentials so that any outsider can't access the documents that are meant to be useful only for the project team. Also the username is used for monitoring which employee did a specific submission and on what time and date so that project tracking and employee evaluation will be easier.

7.1.1 Manager Login : Manager login is different from the employee login as the rights of manager are greater than that of an employee. A manager can create a new Project,

he/she assigns the tasks to different employees, estimates the cost, makes the project plan which are not in the hands of an employee, they just can be assigned tasks, submit those, edit submitted tasks etc.

7.2. Personnel Selection : Every employee has to make a profile that contains his/her login credentials, contact information, skill set. By this information, other employees know the contact information of every other team member, their username and the manager additionally knows the skill set available in each employee who is a part of the project. This information enables the manager to assign tasks to employees only when the required skills for a task match with the skill set available in an employee.

7.3 COCOMO Estimation : Manager before starting to work on the project enters project type and estimated size in KLOC which will be a drop down menu depending upon the type of project selected and taking this as input, the tool will calculate the estimated PM and Development time of the project.

7.4 Project Plan : The tool will enable the project manager to generate the project schedule depending upon the skill set , resources, time, budget and size of project. This will help the project manager to think in a more technical point of view rather than estimating the time for each milestone manually.

7.5 Scheduling

7.5.1 Activity Graph : As the functionalities of the project are difined and the manager knows the available staff and resources, knowing the order of tasks is easy to do. By using that info, software will generate the activity graph which will define the interdependency between all the tasks and the estimated time to complete each task defined in project plan.

7.5.2 Gantt Chart : Now when the time for each activity is available and the interdependencies are known, the tool will generate a gantt chart which is very useful in project tracking and it will also be updated by the manager with the progress of the project so as to track the schedule of the project and see the delay, if any in the project schedule.

7.6 Document Management

7.6.1 Document Mangement Centre : The tool will have the functionality to store all the document in a prespecified repository having a known space capacity so that each document can be submitted by the employee at the single place. Also each document submitted will have a person's name in front of it indicating the member who submitted it, date and time of submission and the version.

7.6.2 Version Control : Only the latest version will be shown to the members and the previous version could be accessed on demand i.e. there will be link to each version but in the primary window of documents only the latest version will be shown to decreas confusion.Version control will also track how much and in which part of the document change has been done.

7.7 Evaluation and Feedback : This functionality will enable rating/feedback to each member from the fellow members as well as the evaluation from project manager depending upon the performance in the project. This will help the team members to know which members are non conforming, which of them are good at specific things and which of them are quality performers.

7.8 Project Monitoring : The tool will itself monitor individual team members in the tasks assigned to them by the project manager, it will notify the member who is responsible for the submission as well as the manager of the submission date. Also because of the name and time attachment to each document submitted, it will enable the manager to see which member does the work on time and which doesn't.

7.9 Communication : Software will have a dedicated page to communicate with team members dynamically. It will convey which members are online, which are not and let the members to chat with the name of employee in front of each message in the chat to know which message came from which member.

8. Non Functional Requirements

8.1. Reliability : The software developed has to be designed simple so that it is easy to understand. The system has to maintain accuracy in its results, completeness, and robustness/integrity and has to be legible. It has to maintain consistency in a user acceptable manner when operating with the environment for which the system was intended.

8.2. Security : The Team Leader (Admin) and the team members with valid credentials will be able to login and use the management activities. Confidentiality, authentication. The system should maintain integrity, confidentiality and availability of accounts and provide protection of data and data availability.

8.3. Maintainability

8.3.1 Quality of design is maintained.

8.3.2 The system should maintain structuredness providing testability and understandability (how the system works) with self- descriptiveness and providing accountability.

8.4 Portability : The system has to be device-independent that is through internet, independent of the device, it should enable the team members to perform management activities.

1. ## 8.5 Performance :

8.5.1 : The system should have efficient response and screen refresh times and provide precise results. Changing screens will require very little computation and thus will occur very quickly. Server updates should only take a few seconds as long as the device maintains a steady signal.
8.5.2 : The system should maintain consistency.

8.6 Usability :

8.6.1 : The system should provide a user-friendly interface. It should not have hang-up against errors, delays, unexpected behavior. The system should provide precise and constructive error messages. It should also provide guidance for correcting errors, unexpected behavior.
8.6.2 : The system should have clearly marked exits, speaks user’s simple and natural language.
8.6.3 : The system provides sharing of information with the chat application, also giving access to view the work products completed by other staff members.