
Software Requirements Specification

for

Work Management System

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this project is to develop a Work Management System (WMS) that efficiently manages various works, workers within an organization. The system aims to automate the process of assigning workers to works based on their skills, availability, and work priorities, thereby optimizing resource utilization and improving overall productivity.

1.2 Document Conventions

- The document is written in Cambria Font.
- Main headings (size 18) and sub-headings (size 14) are written in bold.
- The rest of the document is written out in font size 11.
- Prior knowledge about interpreting user case diagrams is preferable for better understanding.

1.3 Intended Audience and Reading Suggestions

This document is intended for developers and Project Managers of different companies. Managers, workers of a company are the primary users of the software would be mostly interacting with the frontend of the software.

This SRS contains the structure of the application as well as the software dependencies of the application, which must be present for the application to function smoothly. For reading this SRS, the reader should have a basic knowledge of Object-Oriented Programming, Web Development Frameworks (python framework Django is used), and Database Management. The reader must also have some prior knowledge about use case diagrams.

1.4 Product Scope

- The WMS software is made to help company administrators or anyone else managing worker information. It gives you a way to easily do different tasks, like adding, changing, or removing worker details, adding new work information, assigning workers to tasks, marking tasks as done, and seeing all the details about workers and their work.
- The software is useful for both companies and individuals who need to organize their work tasks and resources effectively.

- The WMS software also allows users to track the progress of tasks and projects, helping them stay updated on what's been completed and what still needs to be done.

1.5 References

Although the basic outline of the SRS was provided, other websites referred to while the making of this document

[MySQL Tutorial \(w3schools.com\)](https://www.w3schools.com/mysql/)

[Django Tutorial \(w3schools.com\)](https://www.w3schools.com/django/)

<https://www.lucidchart.com/pages/> (for use case and class diagrams)

2. Overall Description

2.1 Product Perspective

The Work Management System (WMS) is a cutting-edge software solution crafted to revolutionize the handling of various tasks, workers, and resources within organizations. It replaces manual processes with automated functionalities, enabling seamless management of works and workers' assignments.

Through intuitive features, the WMS facilitates effortless creation, editing, and tracking of works, ensuring efficient allocation of resources such as workers based on skills, availability. By centralizing data and streamlining processes, it significantly reduces administrative overhead and enhances productivity.

Thus, WMS provides a user-friendly, efficient, and secure platform to large amount of data and process Requests, helping organisations control and optimize the productivity of their teams.

2.2 Product Functions

The User here will be a manager. This software provides the given functionalities:

- a) Add/delete worker's details –The system allows the user to add the details of workers and can edit/ delete them whenever needed. The worker details should include the worker's name, worker Id, role, skill level, availability, and other relevant information.
- b) Add work details – System should allow the user to add the details of works like Work Id, Work description, required no of workers and priority.
- c) Assign work - The user can assign specific workers to specific works according to the requirements. The software takes into account all the cases like the case of workers without any assigned work or works whose required number of workers are not fulfilled.
- d) Update work status – The software allows users to indicate when a task is finished. When all the necessary tasks for a work item have been completed, user can mark that work item as complete.
- e) Display worker's status - The system allows the user to display the details of workers and can edit/ delete them whenever needed. The worker details should include the worker's name, age, worker id, role, skill level, availability, email id and works assigned.

- f) Display work's details - The system should allow the user to display work's details. The work's details should include the work status, the worker's requirements, workers assigned, duration, start date and priority.

2.3 User Classes and Characteristics

Work Management System has only one type of user.

- a) **Manager**- Manager can do the following: -
 - Add /delete a worker and edit his/her details like role, skill level, availability, works completed.
 - Add details of a new work which requires details like work Id, work description, required no of workers of each role, start date and priority.
 - Perform an assignment of workers to the works according to requirement of work and availability of workers.
 - Mark work status as complete.
 - Display worker's details like name, age, email id, role, skill level, availability, works assigned and availability.
 - Display work's details like work Id, work description, required no of workers and priority.

2.4 Operating Environment

The software can be used by any user with access to a device with the internet. The Work Management Portal will have a server from which it will retrieve all the information and the database will be maintained at the server. The software can run on any modern device which can load a modern web browser and has a reliable internet connection.

2.5 Design and Implementation Constraints

- Each worker can be assigned only one work at a time.
- There may be workers who have not been assigned any work.
- There may be works that do not have the required number of workers assigned to them.

2.6 User Documentation

All user documentation, including basic tutorials, would be made available via the README of the repository. The same information would also be available on the deployed application.

2.7 Assumptions and Dependencies

- **Assumptions:**
 - Only Admin has access to the central database.
 - Input given is consistent with the format.
 - A worker is assigned a single role.

- **Dependencies:**

- Python3: Required programming language for running the WMS software.
- MySQL Workbench: Database management system used to store and manage WMS data.
- Django Graphical User Interface (GUI): Frontend framework utilized to create the user interface for interacting with the WMS.

3. External Interface Requirements

3.1 User Interfaces

Manager Interface: This interface allows the manager to do the following:

- Add/edit/delete the details of a worker like role, skill level, availability and personal details.
- Add details of a new work that include the work's name, description, required number of workers and the priority.
- Assignment of works to the workers according to work requirements and workers availability based on their skill level.
- Mark the status of work as complete.
- View workers' details which include the worker's name, Id, age, contact details, role, skill level, availability,
- View work's details like completed/not completed, requirements, workers assigned, duration, priority.

3.2 Hardware Interfaces

As the software is a web application, it interfaces with standard hardware devices such as laptops, desktop computers, tablets, and mobile phones, enabling users to access and run the software seamlessly.

3.3 Software Interfaces

We have to maintain two databases:

- **Work database:**

This database stores all the works currently in the system and their details, which are

- Work Id
- Work Name
- Status
- Priority

- Workers Requirements
- Start date
- Duration
- Workers' database:
This database stores all the workers involved and their basic details, which are
 - Name
 - Worker Id
 - Age
 - Email Id
 - Skill level
 - Role
 - Work assigned
 - Availability

3.4 Communications Interfaces

User:

- Front End: The user can access the front-end UI through a modern web browser.
- Back End - Database: The backend communicates with the database with the help of the MySQL server.

4. System Features

4.1 User/Manager

Access to central database:

The Manager, being the superuser, has the ability to

- Add/edit/delete the worker details
- Add the work details
- Assign workers to the works
- Mark work status as completed
- Display worker's details

- Display work details

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- Work Management System is a web-based application and can work on a decent internet connection.
- This can work on operating systems such as Windows, Linux, or Mac.
- The system should be able to process requests to the database and perform computations for better performance.
- Any of the recent versions of the browser would suffice for running this web-based application

5.2 Safety Requirements

Manager must enforce strict access controls to ensure that only authorized personnel can access the software, thereby mitigating the risk of unauthorized database access or modifications.

5.3 Security Requirements

Make sure only authorized users can get into the WMS by using strong passwords or other security methods.

5.4 Software Quality Attributes

- The WMS has an intuitive and user-friendly interface that allows users to easily navigate through the system and perform tasks without encountering confusion or difficulties.
- The WMS is compatible with a variety of devices which has a browser.

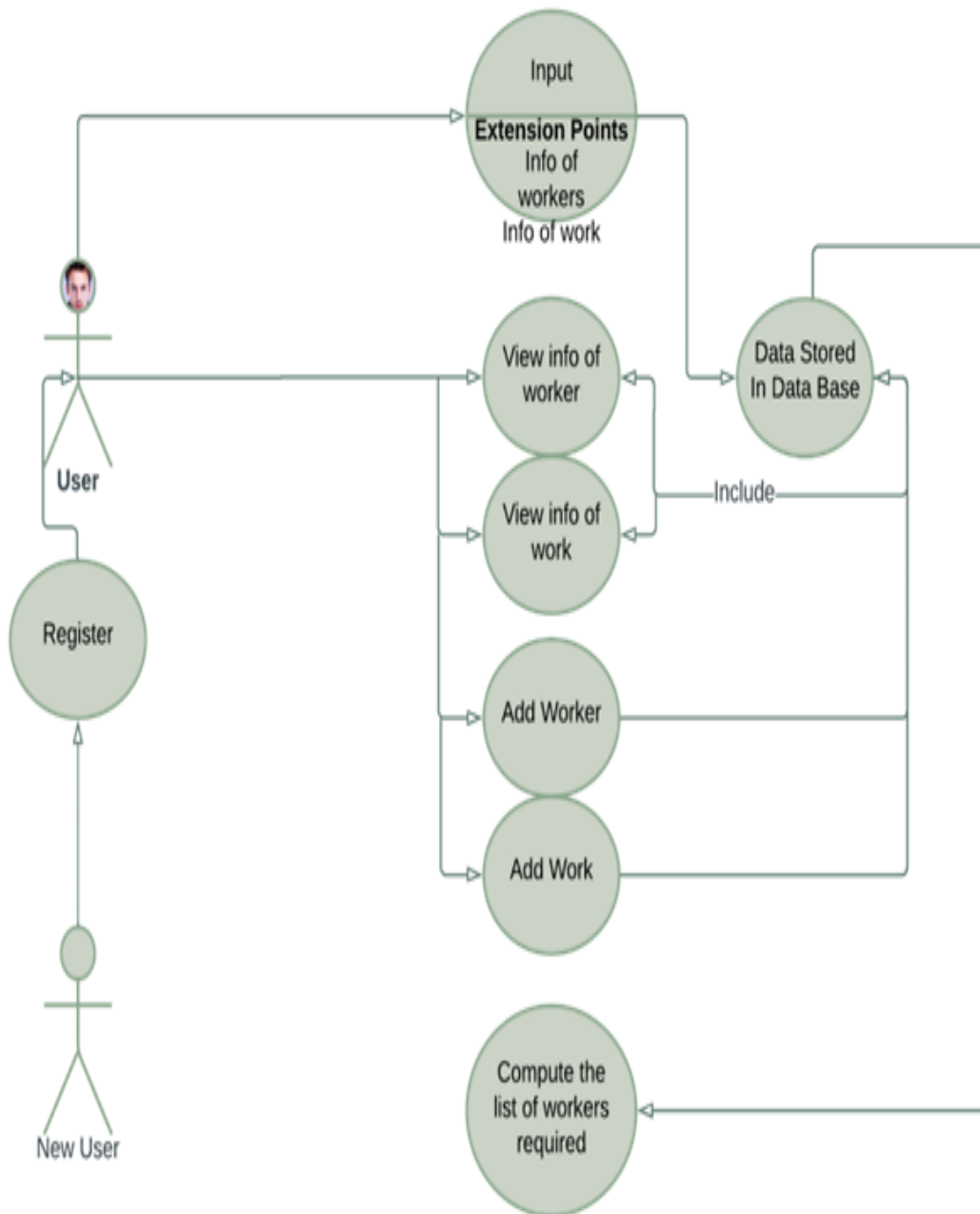
6. Other Requirements

Appendix A: Glossary

- SRS: Software Requirements Specification, which is a document that completely describes all of the functions of a proposed software.
- GUI: Graphical User Interface which is a form of user interface that allows users to interact with electronic devices through graphical icons
- WMS: Work Management System
- MySQL: My Structural Query Language is a relational database management system
- UI: User Interface by which the user and a computer system interact, in particular the use of input devices and software.

Appendix B: Analysis Models

a. Use Case Diagram



b. Class Diagram

