Software Requirements Specifications

for

Work Management System (WMS)

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version
Creation	23rd March	All Functionalities Added	1.0

1. Introduction

1.1 Purpose

The Work Management System (WMS) is designed to streamline task allocation and management processes within an organization. This Software Requirements Specification (SRS) document serves as a comprehensive guide for the development team, outlining both functional and non-functional requirements, along with external interface specifications, necessary for the successful implementation of the system.

1.2 Document Conventions

This Software Requirement Specification Document has been written using Free writing tools such as Google Docs typed in Arial font. The font size used is 11 for text and 14, 20 for headings. All headings are highlighted appropriately in bold. The document is prepared using the UK English convention.

1.3 Intended Audience and Reading Suggestions

This document is intended for the development team, project stakeholders, and anyone involved in the design, development, or testing phases of the Work Management System. It is recommended to read the document sequentially to gain a comprehensive understanding of the system requirements.

1.4 Product Scope

The Work Management System (WMS) aims to facilitate the efficient allocation and management of tasks to workers within an organization. It encompasses functionalities for user registration, worker management, work assignment, and progress tracking

1.5 Glossary

Term	Definition
Database	Collection of all the information monitored by this system
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.
Manager	A user responsible for managing Worker profiles and Works within the system
Worker	Individuals assigned to perform work in the system
Work	Task or Assignments that need to be completed
User	Here Manager

1.6 References

This document is based on the IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specification given by the IEEE Computer Society in 1998.

2. Overall Description

2.1 Product Perspective

The Work Management System (WMS) emerges as a pioneering solution aimed at simplifying work processes for modern professionals facing challenges such as time constraints, logistical complexities, and remote work arrangements

Born from the recognition that conventional work environments can be restrictive and inefficient, the WMS empowers individuals and teams to optimize productivity and workflow organization. With graphical interfaces and seamless interaction with a backend database, users can easily store, retrieve, and manipulate essential work-related data with unprecedented ease.

2.2 Product Functions

The key functions provided by the Work Management System are :

- Registering Users
- Managing Works
- Managing Workers
- Allocating Workers to Works (Manual or Automatic)

2.3 User Classes and Characteristics

- · Manager
  - Has the access to the system
  - Handles the Works and Workers in the Database
  - Needs Authorization for Access to the Database

2.4 Operating Environment

The Work Management System is a web-based application compatible with modern web browsers such as Google Chrome, Mozilla Firefox, and Microsoft Edge. It requires a stable internet connection for access.

2.5 Design and Implementation Constraints

The use of free MongoDB clusters limits us from adding a huge database to the backend, changes in the cluster or MongoDB policy regarding provisions for free access can affect the working and functionalities of the system.

2.6 User Documentation

Comprehensive user documentation, including manuals and tutorials, shall be provided to assist users in navigating and utilizing the Work Management System effectively.

2.7 Assumptions and Dependencies

The Work Management System assumes users possess basic knowledge of web browsing and form interaction. Dependencies include a stable internet connection and modern web browsers compatible with HTML5 and CSS3.

3. External Interface Requirements

3.1 User Interfaces

The product will consist of a web application with which the user will interact. The manager will have access to the functionalities if he has passed the authorisation of the system

3.1.1 Login / Signup Page

- Username
- Password

3.1.2 Home Page

A simplistic home page with 3 redirection buttons which serve the primary purpose of the software

- See the Work(s) Details
- See the Worker(s) Details
- Assign Work to the Workers

3.1.3 Work Details

Display the details of all the works currently present in the system. Following are the attributes :

- Name
- Required Number Of Workers
- Workers Assigned
- Duration in Days
- Priority
- Completion Status
- Work Type

The page also provides the user to search Work by name.

An option to edit Work details. Only following attributes can be edited :

- Name
- Duration in Days
- Priority
- An option to “Mark as Complete” and “Delete Work”

An option to view all the allocated workers to that respective work
Add Work button to add new work with the above mentioned attributes

3.1.4 Worker Details

Display the details of all the workers currently present in the system. Following are the attributes :

- Name
- Age
- Gender
- Role
- Worker ID
- Active (No : if currently not working on any Work, Yes : if currently working on any work)

The page also provides the user option to search workers by name and Worker ID.
The page provides an option to ‘Delete’ or ‘Free’ Worker

An option to edit Worker details. Only following attributes can be edited :

- Name
- Age
- Gender
- Role

Add Worker button to add new work with the above mentioned attributes

3.2 Hardware Interfaces

The backend server will require a good processing unit to handle the requests. There are no specific hardware requirements for the user. An active internet connection is required for the user to interact with the software.

3.3 Software Interfaces

The project will connect to MongoDB for accessing the database. The project is a web app and thus just requires a working internet connection and a web browser and is OS independent. The project uses Node.js on the backend handling whilst HTML, CSS (using EJS template engine) on the frontend

3.4 Communications Interfaces

All the communications will be done via the web-browser with the standard HTTPS protocol.

4. SYSTEM FEATURES

4.1 Register a Manager

4.1.1 Description.

Getting on the platform requires signing up followed by logging in. The system enables users to register accounts to gain access to the Work Management System.

4.1.2 Stimulus/Response Sequences

- **Stimulus :** Users navigate to the sign up page or the login page and complete the registration or authentication respectively.
- **Response :** Upon submission, the system validates the provided information, creates a user account, or grants access to the system.

4.1.3 Functional Requirements

- **Signup :** As soon as the user (manager) enters they will see a general home page and there will be a link to go to the signup page. There the user will choose the profiles and then enter the details in the respective boxes. After the details are authenticated/stored the user will be directed to the respective user page.
- **Login :** Users (Managers) will enter the credentials, created during the signup process and then after authentication, they will be redirected to the respective user page.

4.2 Managing Workers

4.2.1 Description

This feature allows administrators to manage worker profiles within the system. It displays a list of workers, a search bar and access to edit, delete, free and add workers.

4.2.2 Stimulus/Response Sequences

- **Stimulus :** Administrators interact with the worker management interface to add, edit, or deactivate worker profiles.
- **Response :** The system processes administrator actions and updates the worker database accordingly

4.2.3 Functional Requirements

- The system shall provide forms for administrators to add and edit worker profiles.
- The System shall display a list of workers .
- Worker profiles shall include fields for name, age, gender, role, and worker ID.
- Administrators shall have the option to deactivate worker profiles, rendering them inactive in the system.
- Deactivated workers shall not be eligible for work assignment until reactivated by an administrator.
- Search by id and name available.

4.3 Managing Works

4.3.1 Description

This feature allows administrators to manage work within the system. Administrators can create, edit, and track works/tasks within the system. Provided a search bar to search work by names. Administrators can see the workers working or have worked for that specific work.

4.3.2 Stimulus/Response Sequence

- **Stimulus :** Administrators access the work management section and interact with the interface to perform various actions on works/tasks.
- **Response :** The system processes administrator actions, updates the work database, and updates relevant users of their work assignment.

4.3.3 Functional Requirements

- The system allows the user to add a new work/task, edit and delete a task.
- Work details shall include fields for title, required number of workers, duration, priority, and completion status.
- The system shall provide forms for administrators to add and edit works.

- Search by name available.
- The System shall display a priority wise list of works .

4.4 Work assignment

4.4.1 Description

The user(manager) can select a type of work, thus a list of works where the number of workers assigned is less than the number of workers required is displayed. The manager can decide on to whether assign the work automatically or manually

4.4.2 Stimulus/Response Sequence

Stimulus : Administors access the worker allocation system and manage the work distribution.
Response : The function processes the input and assigns available workers having roles same as the selected work type.

4.4.3 Functional Requirements

- After selecting the type of work to be revived, the user has an option to either Assign Work or Allocate Manually.
- Here, the Assign Work option would automatically allocate the available workers of the respective type.In case the number of available workers of a role are less than the number of required workers of that work, insufficient number of workers are assigned to the work.
- The user also has authority to manually allocate any particular worker a corresponding work.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The user should be able to query databases quickly and the results fetched must be appropriate. This can be done by finding the right balance between performance and accuracy by using MongoDB.

5.2 Safety Requirements

The application runs on the web browser and hence harm to the user device is minimal, whereas a lot of data is to be read and written and hence the data storage and the server damage is possible but that too during extremely heavy usage.

5.3 Software Quality Attributes

- **Maintainability :** Different versions of the product should be easy to maintain. For development it should be easy to add code to an existing system, and it should be easy to upgrade for new features and new technologies from time to time. Maintenance should be cost effective and easy.

- **Usability :** This can be measured in terms of ease of use. Application should be user friendly. Should be easy to learn. Navigation should be simple.

- **Flexibility :** Should be flexible enough to modify. Adaptable to other products with which it needs interaction. Should be easy to interface with other standard 3rd party components.

5.4 Business Rules

The software will be free to use for all users and the source code will be publicly hosted for free use and modification.