Software Requirements Specification

For

**Simulation Software**

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**SOFTWARE REQUIREMENT SPECIFICATIONS**

**1. Introduction**

Since factories are having many numbers of machines in various categories it is very hard to maintain all of them properly. Many numbers of machines in various categories can break down at once and the number of adjusters will not be enough to repair all of them. The Simulation Software deals with the management of resources and information and also how effectively and seamlessly coordinates these resources as far as a break down of a machine happens.

1.1 Purpose

The purpose of the project is to collect and analyze all data regarding the machines in different categories and the adjusters that provide support. Thus we can provide proper assistance to the adjusters to repair the machines which need to repair. Also, I sort out how I hope this will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered. In short, the purpose of this document is to provide a detailed overview of my project, its parameters, and it’s goals. This document describes the project's target audience and its user interface, hardware and software requirements. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes.

1.2 Scope

Primarily, the scope of the Simulation Software project is to help the factories which have multiple numbers of machines and adjusters. It gives a basic idea about how often a machine will break down and the optimum number of adjusters they should employ.

1.3 Definitions, Acronyms, and Abbreviations

* Administrator - Refers to the user, who is responsible for all the registration and managing. They are the service managers.
* User – adjusters.
* SQL -> Structured Query Language
* IDE -> Integrated Development Environment
* SRS -> Software Requirement Specification.

1.5 Overview

The rest of the SRS examines the specifications of the Simulation Software in detail which includes the requirements, users, constraints, etc.

**2. Overall Description**

This section describes the major roles of Simulation Software.

 2.1 Product Perspective

The proposed Simulation Software will help to determine the optimum number of adjusters will need to a particular factory based on their machine details.

2.2 Users -

* Service manager
* Adjusters

2.3 Operating Environment

 The designed software should run on any personal computer with a good internet connection.

2.4 General Constraints

Any update regarding how machine and adjuster utilization depends on the number of machines, number of adjusters, reliability of machine in terms of mean time to failure of a machine (MTTF) will update as soon as possible and should notify respective users of the system.

**3. External Interface Requirements**

3.1 Administrator Interface

The interface must provide different commands for each of the following actions:

* Register of new service manager
* Confirm a register of a new adjuster
* Updating the number of machines
* Updating the types of machines
* Updating the meantime to failure of a machine
* Updating the machines that need to be repaired
* Updating any Request for supplies
* Updating details in the user Database
* Allows secured usage of information

3.2 User Interfaces

The interface must provide different commands for each of the following actions:

* Requesting for supplies
* Updating about repaired machines
* Register of a new adjuster

3.3 Software Interfaces

 Each adjuster has its own login ID which is provided by the administrator(service manager). The administrator makes sure to employ the optimum number of adjusters based on the information about their machines.

**4. Functional Requirements**

 The main functional requirements are,

* Calculate the number of adjusters and machines
* Calculate the average machine and adjuster utilization
* Update about the status of a machine and adjusters
* Register
* Manage supplies
* Request for supplies

4.1 Register

The users will have to register/sign up first. There are two different types of users.

adjusters – after doing the registration by themselves they have to wait for the confirmation from a service manager.

Service managers- They are the administrator of the system.they can register by themselves and they have to confirm the registration of new adjusters

4.2   Calculate the number of adjusters and the machines

This functionality is used by service managers.

4.3   Request for supplies

The adjusters request for supplies that are required.

4.4   Manage supplies

This functionality is used by the service managers to give the supplies that needed to repair the machines.

4.5   Calculate the average machine and adjuster utilization

This functionality is used by the service managers

4.6   Update about the status of a machine and adjusters

This functionality is used by the adjusters

**5. Nonfunctional Requirements**

5.1  Performance Requirements

●Users should have a proper internet connection to update all recent data.

5.2  Security Requirements

● The server-side data should be secure and not be accessible by unauthorized persons.

● Issuing an acknowledgment message can be accessed by only authorized persons.

5.3 Software Quality Attributes

* Adaptability
* Availability
* Correctness
* Flexibility
* Interoperability
* Maintainability
* Portability
* Reliability
* Usability
* Performance

**6.  Design Constraints**

6.1  Security

* The user ID should be unique and passwords must be encrypted.
* The security details should be highly confidential and protected from malicious distortions.

6.2  Fault Tolerance

* In case the system crashes or power failure, the data should not be lost.
* A backup of at least a week is to be maintained at all times.

6.3  Hardware limitations

* Access to the software can be done by any personal computer