<Employee System Management>

Version 1.0

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 23.03.2018 | 1.0 | <details> | Pali Anamaria |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Table of Contents

1. Introduction 4

2. Non-functional Requirements 4

2.1 Availability 4

2.2 Performance 4

2.3 Security 4

2.4 Testability 4

2.5 Usability 4

3. Design Constraints 4

# Introduction

The EMS can run on cloud or on a local server. The system is developed using open-source technology and MySQL. To run this we need MySQL version 5.0 or greater, Apache,Nginx or other servers for running the EMS, the software can run on any server that supports Java and MySQL. As the project is operating system independent, and will run perfectly on Windows, Macintosh, Linux or Sun Solaris. As the software runs similar to a website, the user will be able to interact with the interface with the help of any web browser such as Firefox, Google Chrome or Safari. The system can also be interacted from computers which maybe tablet PC or a mobile phone that supports networking and has a web browser. If a user wants to log on to the system, user has to open the web browser and type the URL of the application. User will be able to interact through interface, input data and retrieve data from system through the web browser. The speed of the system depends on the hardware or hosted type.

# Non-functional Requirements

In [systems engineering](https://en.wikipedia.org/wiki/Systems_engineering) and [requirements engineering](https://en.wikipedia.org/wiki/Requirements_engineering), a non-functional requirement (NFR) is a [requirement](https://en.wikipedia.org/wiki/Requirement) that specifies criteria that can be used to judge the operation of a system, rather than specific behavior. They are contrasted with [functional requirements](https://en.wikipedia.org/wiki/Functional_requirement) that define specific behavior or functions. The plan for implementing functional requirements is detailed in the [system design](https://en.wikipedia.org/wiki/Systems_design). The plan for implementing non-functional requirements is detailed in the [system architecture](https://en.wikipedia.org/wiki/Systems_architecture), because they are usually [Architecturally Significant Requirements](https://en.wikipedia.org/wiki/Architecturally_Significant_Requirements). Broadly, functional requirements define what a system is supposed to do and non-functional requirements define how a system is supposed to be.

## Availability

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week. The system should accurately provide real time information taking into consideration various concurrency issues.The system shall provide 100% access reliability

## Performance

There is no restriction on the number of the users to be added to the database.

The information should be refreshed at regular intervals depending upon whether some up dates have occurred or not. The system shall respond to the member in not less than two seconds from the time of the request submit. The system shall be allowed to take more time when doing large processing jobs. Responses to view information shall take no longer than five seconds to appear on the screen. Mean Time to Repair (MTTR) - Even if the system fails, the system will be recovered back up within an hour or less.

## Security

Users must change the initially assigned login authentication information (password) immediately after the first successful login.

The initial password may never be reused. The payroll system shall ensure that the employee salary data can be accessed only by authorized users.

The payroll system shall distinguish between authorized and non‐authorized users. Employees shall not be allowed to update their own salary information, and any such attempt shall be reported to the security administrator.

The access permissions for system data may only be changed by the system’s data administrator.

## Testability

The goals in testing this system include validating the quality, usability, reliability and performance of the application. Testing will be performed from a black-box approach. Tests will be designed around requirements and functionality.

## Usability

The system shall allow the users to access the system from the Internet using HTML or it’s derivative technologies like XML/CSS. The EMS uses a web browser as an interface. Since all users are familiar with the general usage of browsers, no special training is required. The system is user friendly and online help makes using the system easy.

# Design Constraints

**Front end-**is a term used to characterize program interfaces and services relative to the initial user of these interface and services. It usually refers to the client side of an application. A front end application is one that users interact with directly.

**HTML**- is a computer language devised to allow website creation. These websites can then be viewed by anyone else connected to the Internet. Having the basic knowledge of HTML will could help make or develop m-commerce websites and will also prove to be handy especially for editing and modifying web pages. Furthermore, it has some low cost benefits because of its many free online tutorials and advice support which is vital for m-commerce development.

**JavaScript** - is a scripting language that is browser based and was developed by Netscape to enable web masters/authors to add interactivity and enhances behavior of web pages. Some of the dynamic behavior that can be generated by JavaScript is validating form, performing specific actions e.g. after a mouse click, adding timestamps etc. JavaScript is an open language and anyone can use it. It also shares m any of the features and structures of the Java programming language, though it is not really related to Java. It was developed independently.

**CSS** -is a style sheet language used to describe presentation and layout of HTML tags. CSS is used to enable separation of document content from document presentation. This refers to the separation of document presentation aspects such as colors, layouts and fonts from the actual document content. CSS helps us achieve layout design and control much easier.

**Back End Technologies:**

**MySQL**-stands for My Structured Query Language. It is the world’s most popular open source relational DBMS. MySQL is available for free under the GNU General Public License for open source benefits/reasons related to development. Initially MySQL was free and some versions of it are still free though if you desire to use MySQL for commercial purposes you will need to purchase a license. It is non-proprietary, easily extensible and platform independent. Its downside is that it lacks a graphical user interface; therefor you need to know how the database works to make the most efficient use of it.

**Java**-is a general-purpose [computer-programming language](https://en.wikipedia.org/wiki/Programming_language) that is [concurrent](https://en.wikipedia.org/wiki/Concurrent_computing), [class-based](https://en.wikipedia.org/wiki/Class-based_programming), [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_programming), and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "[write once, run anywhere](https://en.wikipedia.org/wiki/Write_once,_run_anywhere)" (WORA), meaning that [compiled](https://en.wikipedia.org/wiki/Compiler) Java code can run on all platforms that support Java without the need for recompilation. Java applications are typically compiled to [bytecode](https://en.wikipedia.org/wiki/Java_bytecode) that can run on any [Java virtual machine](https://en.wikipedia.org/wiki/Java_virtual_machine) (JVM) regardless of [computer architecture](https://en.wikipedia.org/wiki/Computer_architecture). As of 2016, Java is one of the most [popular programming languages in use](https://en.wikipedia.org/wiki/Measuring_programming_language_popularity), particularly for client-server web applications, with a reported 9 million developers.