1.Introduction

1.1 Purpose

The purpose of this project is to build Chemical Inventory Management System to manage and track chemicals and their properties stored in our Chemical laboratory.

1.2 Document Conventions

1.3 Intended audience and reading suggestions

This SRS is developed with a major aim of guiding the creation of a software that shall assist Dr.Apurba Das and his staff in maintaining inventory of his Chemical Laboratory, However it can be used by any student by taking permission from the concerned authority.

Individuals who wish to use and/or understand how our software works can refer to further sections of this SRS.

1.4 Software Scope

The purpose of our project Chemical Inventory Management System is to ease the management of various chemicals that the laboratory is in possession of . This purpose is achieved by keeping track of each chemical's location,it's stock, . This guide is applicable to all chemical management activities including use and storage . This software will have data about the certain properties of the chemicals such as : chemical formula , molecular weight , physical state, purity etc .

1.5 References

2. General Description

2.1 Product Perspective

Our project will store following information

1.Chemical Details :
The certain properties of the chemicals such as : chemical formula , molecular
. weight , physical state, purity etc .

2.Technical Details :
Expiration date , Lot no. , CAS no. ,Bottle Reference

3.Location, Sub-location ,Additional location information if required

2.2 Product Functions

The following are the aims the project serves to achieve in order to meet the client's Requirements :-

1)

2)

3)

2.3 User Classes and Characteristics

Users of the system should be able to retrieve the information about chemicals

1.Admin:

a) can insert information about new chemicals
b) can delete information of chemicals
c) can update all information of chemicals.

2.Staff:

a) able to see information of chemicals but not able to modify.

b)

3. System Features :

The chemical inventory management system keeps a record of the physical and chemical properties of the chemicals present in the lab along with their location, CAS number, purity, manufacturer and vendor . It also keeps an eye on the stock and usage of the chemicals.

Response Sequence :

- Search for a chemical by its name

- Displays a detailed list of all the above mentioned properties

4.User Interface requirements :

User interface (UI) is an important part of any software or hardware or hybrid System .A software is widely used and accepted if it is:

=>easy to operate
=>quick in response
=>effectively handling operational errors
=>providing a simple yet consistent UI.

User acceptance is majorly depends upon how user can use Software . UI is the only way for users to perceive the system.

4.1 user interfaces :

=> Front-end software :HTML,Javascript,Css,
=> back-end software : Mysql

4.2 Hardware Interfaces :

=> Windows
=> we will be using google chrome as browser which supports Html,Javascript and CSS

4.3 Software Interfaces :

We will use following softwares in our project :
=> Operating system : we will use windows as an OS.
=> Code Editor : Visual Studio code.using this code editor we will implement Our project.
=> Database : to store all information about chemicals such as their chemical And physical properties we will use MySql

4.4 Communication Interfaces :

Web portal for chemical inventory management system will have different login pages for staff and admin .We will be using signup and login forms to create profiles of admin and staff. Our project will contain the following pages :

=> login page
=> sign up page
=> chemical information page
=> page for chemical details such as exp date,qty etc.(can accessed by admin only.)
=> a page to place order of chemicals.
=> location page.
=> storage page in which we will update information of chemical as it get added or removed.

Our project will have a responsive UI with content presentation,it will also have feedback mechanism and easy navigation to navigate through different pages.strategic use of color and texture to make responsive UI.

5.1 Performance Requirement

The various steps involved to implement Chemical Inventory Management System are listed down below :

A) E-R Diagram :

An ER diagram shows the relationship among entity sets. An entity set is a group of similar entities and these entities can have attributes. In terms of DBMS, an entity is a table or attribute of a table in a database, so by showing relationship among tables and their attributes, ER diagram shows the complete logical structure of a database.This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relational database.

B) Normalisation :

Normalization is a process of organizing the data in database to avoid data redundancy, insertion anomaly, update anomaly & deletion anomaly.
There are three types of anomalies that occur when the database is not normalized. These are – Insertion, update and deletion anomaly.
Here are the most commonly used normal forms:

- First normal form(1NF)

- Second normal form(2NF)
- Third normal form(3NF)
- Boyce & Codd normal form (BCNF)

Normalization is the process of breaking down a table into smaller tables. So that each table deals with a single theme. There are three different kinds of modifications of anomalies and formulated the first, second and third normal forms (3NF) is considered sufficient for most practical purposes. It should be considered only after a thorough analysis and complete understanding of its implications.

5.2 Safety requirements

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5.3 Security Requirements

Security is an important issue in database management because information stored in a database is very valuable and many time, very sensitive commodity. So the data that will be stored in our database system will be protected from abuse and from unauthorized access and updates.

5.4 Availability

This software is basically being designed to be used by Mr . Apurba Das for the purpose of maintaining inventory of his Chemical Laboratory and hence will be available to him and his concerned staff .

5.5 Maintainability

The administrators and staff in chargers should maintain correct record of the chemicals in the inventory and should update the database as and when required .