**SOFTWARE REQUIREMENT SPECIFICATIONS**

**Project Name** : Database Server

**Document Title** : SRS

**Project Type** : Client Server

**Project Timeline** : 02.01.2023 to 12.01.2023

Logo, company name

Description automatically generated

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**1.Intoduction:**

This Introduction of the Software requirement specification provides an overview of the entire software. The entire SRS with overview description purpose, scope, tools used and basic description. The aim of this document is to gather, analyze and give an in-depth insight into the complete database server application by defining the problem statement in detail. The detailed requirements of database server application is provided in this document.

* 1. **Purpose:**

The purpose of this document is to show the requirements for the “Database Server”, in which multiple clients will request the Server to store the data and retrieve the data from database depending on the type and format of the data.

* 1. **Intented Use:**
* Development team
* Maintenance team
* Clients
  1. **Scope:**

An application to store and retrieve different type of data such as Employee data, School data, etc. from the database server. A list of supported data types and format is published by the server. All clients connecting to server will send data to store in the server and they can retrieve the data from Server.

**2.Overall Description:**

This project aims to create development of a Database Server Application. The server should maintain different types and formats of data. The server will receive the type and format of data from the client followed by actual data entry and the server will add to Database. The server should store the data in an appropriate structure and return success or failure to client. The will take the input from user based upon the type and format. The server should accept atleast two Clients. If the two clients are trying to modify the structure, the server will throw an error to clients.

**2.1 Assumption and Dependency:**

* System should have Linux
* Putty to be installed
* System should have either 4GB or more RAM
* The service is used preferably on a desktop or laptop

**3. System Features and Requirements:**

**3.1 Functional Requirements :**

**3.1.1 DS\_01:** The server will maintain the different types and formats of the data such as employee data and student data.

**3.1.2 DS\_02:** The client will send the actual data (entry) on basis of type and format to the server and the server will add to the data base.

**3.1.3 DS\_03**: Theserver will store the data in an appropriate structure and will return the status as either success or failure to the client.

**3.1.4 DS\_04:** The server client provide the user menu interface for modifying the data in data base.

**3.1.5 DS\_05:** The client will accept input from user for type and format in case of any error , that data won’t send to the server and will return error.

**3.1.6 DS\_06:** The server should accept atleast two clients.

**3.1.7 DS\_07:** The server should ensure only that both client cannot attempt to write /modify the data base at the same time.

**3.2 Technical Requirements :**

**3.2.1 DS\_TR01 – Process Synchronization:** It is the way by which processes that share the same memory space are managed in an operating system. Here, the server ensures the protection of data while two clients accessing the same database i.e., Employee data there by avoiding conflicts

**3.2.1 DS\_TR02 – Shared Memory in Linux :** The same database contains different types and formats of data. Mutex can be used for locking when two clients attempt to modify same database.

**3.2.3 DS\_TR03 - Socket Programming in C – TCP :** Socket programming is the way of connecting two nodes, here the client and server on a network communicate with each other to send and receive the data .

**3.2.4 DS\_TR04 - Support for Statistics** : Server is responsible for the display of statistics related to maintain the various type and formats of data.

**3.2.5 DS\_TR05 – Multiplexing :** I/O Multiplexing is the ability to perform I/O operations on multiple file descriptors.

**3.3.6 DS\_TR06 – Logging and Debugging Framework:** Linux logs provide a timeline of events for a valuable troubleshooting tool when encountering issues. When issues arise, analyzing log files facilitates debugging.

**3.3 System Requirements :**

**3.3.1 Software Requirements :**

* Operating System - Windows 11
* Server-side script - C Language
* IDE - putty
* Libraries used - C libraries

**3.3.2 Hardware Requirements :**

* Processor - I3/Intel Processor
* RAM - 4 GB (min)
* Hard Disk - 128 GB
* Keyboard - Standard Windows Keyboard
* Mouse - Two or Three Button Mouse
* Monitor - Any

**3.4 Non Functional Requirements:**

* **Supportability :**

The system is easy to use

* **Design Constraints :**

The System is built using only C language

* **Reliability & Availability :**

The system is available 24/7 that is whenever the user would like to use the system, they can use it up to its functionalities.

* **Performance :**

The system will work on the user’s terminal.

**4. Data Flow Diagrams**

