SOFTWARE REQUIREMENTS SPECIFICATION

**for**

SOCIAL MEDIA DATABASE

SYSTEM

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# Introduction

## Purpose

The purpose of this document is to define the software requirements for a Social Media Database System. It will provide details of system functionality, constraints, and other relevant information.

## Scope

This system allows users to create posts, like, share, comment, and interact with other users. The database maintains information about users, posts, comments, likes, shares, and friendships.

## Definitions, Acronyms, and Abbreviations

* **SRS:** Software Requirements Specification
* **SQL:** Structured Query Language
* **UI:** User Interface

## References

All references used in this document are derived from industry best practices and aca- demic materials.

## Overview

This document is organized into multiple sections detailing system features, design con- straints, and requirements.

# Overall Description

## Product Perspective

The Social Media Database System is an independent software system designed to facil- itate user interactions through posting, liking, commenting, and sharing.

## Product Functions

* User registration and authentication
* Creating and managing posts
* Commenting on and liking posts
* Adding and managing friends
* Following and liking pages

## User Characteristics

The system is designed for a diverse set of users, including casual users, content creators, and page administrators.

## Operating Environment

The system requires:

* MySQL as the database backend.
* React.js as the frontend framework.
* Operating system Mac OS and Windows 11

## Design and implementation constraints

The system requires:

* Queries must execute within milliseconds to maintain a smooth user experience.
* The database should handle increasing users, but excessive growth may require sharding or replication.

## User Documentation

The system requires:

* Terms and conditions along with device permission..

## Assumptions and dependencies

The system requires:

* Users must have an internet connection to access the application

# Specific Requirements

## Functional Requirements

* Users should be able to create accounts.
* Users should be able to post content.
* Users should be able to like and comment on posts.
* Users should be able to send and accept friend requests.
* Users should be able to like and follow pages.

## External Interface Requirements

### User Interfaces

The frontend will be developed using React.js, providing an interactive and dynamic experience.

### Hardware Interfaces

The system will be hosted on cloud servers, ensuring scalability and availability.

### Software Interfaces

The database will be implemented using MySQL with REST APIs handling data com- munication.

## communication interface

* The system should handle at least 1000 concurrent users.
* Response time for user actions should be less than 2 seconds.

## Design Constraints

The system must adhere to security protocols, ensuring user data privacy and secure authentication mechanisms.

## Software System Attributes

* **Security:** User authentication using encryption.
* **Maintainability:** Modular codebase for ease of updates.
* **Scalability:** Supports increasing user load dynamically.

# System Features

|  |  |
| --- | --- |
| **Feature** | **Description** |
| User Registration | Users can sign up using email and password. |
| Post Creation | Users can create text, image, and video posts. |
| Friend Requests | Users can send and accept friend requests. |
| Likes and Comments | Users can like and comment on posts. |
| Notifications | Users receive notifications for interactions. |
| Privacy Settings | Users can manage their privacy settings. |

# Non-Functional Requirements

* **Usability:** The system should have an easy-to-navigate UI, suitable for first-time users.
* **Privacy:** Unauthorized users should not access or modify other users’ data.
* **Usability:** Intuitive UI/UX for seamless user experience.
* **Scalability:** System should handle growing user base. All important functions (login, posting, liking) should be accessible within 3 clicks.

# Appendix

## Assumptions and Dependencies

* The application assumes a stable internet connection for its services
* It is expected that users have basic knowledge of social media platforms.

## Glossary

* **API:** Application Programming Interface
* **Frontend:** The UI that users interact with.
* **Backend:** The server-side logic and database.

## References

* IEEE Software Engineering Standards
* Database Design Principles
* Security Best Practices for Web Applications