**1. Introduction:**

The High-Level Design (HLD) document outlines the architecture, features, and key components of a Professional Social Network platform, aiming to provide a structured plan for development and deployment.

**2. Platform Overview:**

The Professional Social Network platform aims to create a dynamic environment for professionals to connect, collaborate, and advance their careers. It will facilitate networking, knowledge sharing, and career opportunities across diverse industries.

**3. Key Objectives and Goals:**

The main objectives of the platform include fostering meaningful connections between professionals, promoting knowledge exchange, supporting career growth, and ensuring user privacy and security.

**4. Requirements:**

**4.1) Functional Requirements:**

**User Authentication and Authorization**: Users can securely create accounts and log in, with different access levels and safety measures like email/SMS verification.

**Profile Management**: Users control their profiles, adding personal details, work history, and education, with privacy settings to manage who sees their information.

**Content Creation and Publishing**: Users can create various content types like posts and articles, customize them, and share them with publicly.

**Social Interactions**: Users connect with others, follow them, and engage with their content through likes, comments, and shares.

**Messaging and Notifications**: Users can send private messages, receive notifications for new connections and interactions, and customize their notification preferences.

**Search and Discovery**: Users search for other users, content, and groups, with advanced filters and recommendations to discover relevant connections and content.

**4.2) Non-Functional Requirements:**

**Performance**:

* The system responds quickly (Ensure response times for search processes are within 3 seconds.)
* Page load times should be minimized.

**Scalability:**

* It can grow to accommodate more users and content by distributing the load across multiple servers.
* Horizontal scaling should be supported to distribute the load across multiple servers.

**Security**:

* User data is protected with encryption, strict access controls.
* Measures should be in place to prevent unauthorized access to user accounts and data.
* Secure data storage.

**Availability**:

* The system is always accessible to users, with mechanisms in place to minimize downtime.
* Redundancy and failover mechanisms should be in place to minimize downtime.

**Reliability**:

* It operates consistently without frequent failures, ensuring a dependable user experience.
* Regular backups of data should be performed to prevent data loss.

**Usability**:

* The interface is easy to use, features are labelled clearly, and accessibility features are included for users with disabilities.

**5. Assumptions and Prerequisites:**

**5.1) Java and Spring Boot**: These are used to create the core functionalities of the platform, such as user authentication, profile management, and data handling.

**5.2) AngularJS**: It's utilized for crafting the user interface, ensuring that users can easily navigate through the platform and interact with its features.

**5.3) MySQL**: These databases store user data and other structured information, providing a reliable storage solution for the platform's data.

**5.4) Docker**: It's used to containerize the application, making it easier to deploy and manage across different environments while ensuring consistency.

**5.5) AWS**: Amazon Web Services is utilized for hosting, scaling, and managing the application infrastructure, providing the necessary computing power, storage (Amazon S3), and networking capabilities.

**5.6) Other Tools and Frameworks**: Various other tools and frameworks mentioned in the document are used for testing, deployment automation, and design prototyping to ensure the platform's quality and efficiency.

**6. Architecture and Design:**

The platform will adopt a microservices architecture for scalability and flexibility, with separate modules for user management, content management, social interaction, messaging, and search and discovery.

**7. Data Model and Integration:**

Data will be stored in relational (MySQL) databases, with integration points for third-party services such as authentication providers and analytics tools.

**8. User Flows and Transactions:**

**Registration**: This is where you create an account on the platform by providing your details like name, email, and password.

**Authentication**: After registration, you log in to your account securely using your username/email and password.

**Profile Management**: Once logged in, you can customize your profile by adding information about yourself such as your job title, skills, and interests.

**Content Creation**: You can create and share various types of content like articles, images, or videos to express yourself or share information with others.

**Social Interactions**: You can engage with other users by liking, commenting, or sharing their content, fostering connections and interactions within the platform.

**Messaging**: This feature allows you to send private messages to other users for one-on-one communication or group chats.

**Content Discovery**: You can explore and discover new content, users, or groups based on your interests through search features or recommendations.

**9. Security and Compliance:**

* The platform will implement robust security measures including encryption, authentication, authorization, and compliance with data privacy regulations.

**10. Future Enhancements:**

* Future enhancements may include advanced analytics, personalized recommendations, community building tools, monetization options, and technology upgrades to meet evolving user needs.

**11. Conclusion:**

* The High-Level Design provides a comprehensive overview of the platform's architecture, features, and objectives, laying the foundation for development, testing, deployment, and future growth.

Top of Form