**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

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| --- | --- |
| Date | 30-06-2025 |
| Team ID |  |
| Project Name | Social media mern app |
| Maximum Marks | 4 Marks |

**Technical Architecture Overview:**

The **SocialeX** platform follows a **scalable 3-tier architecture** comprising:

1. **Presentation Layer:** Handles user interactions throughx an intuitive frontend built using modern UI frameworks.
2. **Business Logic Layer:** Processes actions like post creation, interactions, messaging, etc.
3. **Data Storage Layer:** Responsible for persisting user, post, chat, and notification data securely.

The system is **API-first**, supports **modular microservices**, and can be extended to mobile platforms.

**🧩 Table-1: Components & Technologies**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology Used** |
| 1 | User Interface | Web interface for users (feed, posts, messaging) | React.js, Tailwind CSS, HTML, CSS |
| 2 | Application Logic-1 | User auth, profile, post handling, real-time chat | Node.js, Express.js, Socket.io |
| 3 | Application Logic-2 | Admin dashboard, moderation, reports, analytics | React.js (admin), Node.js, RESTful APIs |
| 4 | Database | Stores users, posts, likes, comments, messages | MongoDB, Redis (for cache/chat queue) |

**📊 Table-2: Application Characteristics**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Characteristics** | **Description** | **Technology Used** |
| 1 | Open-Source Frameworks | Based on open libraries and developer-friendly ecosystems | React.js, Express.js, Tailwind CSS |
| 2 | Real-Time Interactions | Enables chat and notifications | Socket.io, MongoDB change streams |
| 3 | RESTful API Services | Handles all frontend-backend communication securely | Express.js, JWT for auth |
| 4 | Scalable Architecture | Designed to handle large number of concurrent users | Microservices, Horizontal scaling |

**📚 References:**

* React.js Official Documentation
* Node.js Best Practices
* MongoDB Schema Design Guide
* Socket.io Documentation
* [Medium Article – Drawing Technical Architecture Diagrams](https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d)

