Requirement Gathering and Analysis Phase

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Project Name: NEXUS : Social media App (MERN)

Maximum Marks: —

# Technical Architecture

The Deliverable shall include the architectural diagram and the supporting technology stack as per the following tables. This document outlines how the Book a Doctor system is designed using open-source technologies, RESTful APIs, and a scalable 3-tier architecture deployed on modern cloud platforms.

## Table 1: Components & Technologies

| **Component** | **Description** | **Technology** | **Purpose/Goals Addressed** |
| --- | --- | --- | --- |
| User Authentication | Secure user login and account management | JWT, bcrypt, Node.js, Express | User Security and Privacy |
| Post Creation and Sharing | Intuitive interface for creating, editing, and sharing posts | React.js, Draft.js | User-Friendly Content Creation |
| Real-Time Interaction Features | Commenting, liking, and notifications to engage users | WebSockets, Firebase | Real-Time Interactions |
| Trending Content Discovery | Showcases trending posts and profiles for user exploration | Elasticsearch, MongoDB | Discovery of Trending Content |
| User Profiles | Customizable user profiles with bio, posts, and other details | React.js, MongoDB | User-Friendly Content Creation, Discovery of Trending Content |
| Responsive Design | Ensures compatibility across devices and provides a seamless user experience | CSS, TailwindCSS, React.js | Visually Appealing and Responsive Design |
| Data Security | Secure storage and transmission of user data | HTTPS, bcrypt, MongoDB | User Security and Privacy |
| Content Moderation | Automated and manual moderation to maintain a safe environment | AI/ML models (TensorFlow), Node.js | User Security and Privacy |
| Analytics and Insights | Tracks user engagement and platform performance | Google Analytics, MongoDB | Discovery of Trending Content |

## Table 2: Application Characteristics

| **Characteristic** | **Description** | **Technology** | **Purpose/Goal** |
| --- | --- | --- | --- |
| **User-Friendly Content Creation** | Intuitive interface for creating and sharing posts, promoting creativity and self-expression. | React.js, Tailwind CSS | Encourage user creativity and effortless self-expression. |
| **Real-Time Interactions** | Features like commenting and liking enable users to interact instantly with each other’s content. | WebSockets, Node.js | Enhance engagement and foster a sense of community. |
| **Discovery of Trending Content** | Users can explore trending posts and profiles to find new content and connect with like-minded people. | ElasticSearch, GraphQL | Promote dynamic content discovery and community growth. |
| **User Security and Privacy** | Robust authentication and encryption mechanisms to ensure data protection and secure access. | JWT, bcrypt, HTTPS | Safeguard user data and maintain account privacy. |
| **Visually Appealing Design** | Modern and aesthetic UI with responsiveness for seamless multi-device access. | React.js, Material-UI, Media Queries | Improve user experience across all devices. |