CHITKARA UNIVERSITY

PROJECT SYNOPSIS

ON

Social Media Mini Platform

SUBMITTED

TO

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

FOR

Backend Engineering

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Index

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1) Problem Statement:

xisting social media platforms face challenges such as **privacy concerns, heavy resource usage, and overwhelming features** that reduce user engagement. Many users seek a **lightweight, secure, and simple alternative** where they can share updates, interact with friends, and receive real-time notifications without distractions.

The challenge lies in designing a **scalable MERN-based social media platform** that offers **posts, likes, comments, follows, and notifications** in a secure and user-friendly way while ensuring **data privacy and smooth performance**.

2) Title of project:

Social Media Mini Platform – A MERN-based Social Networking Website

3) Objective & Key Learnings:

- Build a scalable **MERN application** for social media interactions.
- Provide **core features** like posts, likes, comments, and follow system.
- Enable **real-time notifications** using WebSockets.
- Ensure **secure authentication** with JWT and password encryption.
- Develop an **admin panel** for moderation of posts and accounts.

Key Learnings:

4) • Implementing **MERN stack** for full-stack development.
5) • Designing a **responsive UI** using React.js.
6) • Applying **JWT authentication** and **bcrypt.js** for security.
7) • Using **MongoDB indexing & schema design** for faster queries.
8) • Deploying a project on **cloud services** (AWS/Firebase/Heroku).

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9) Options available to execute the project:

a) Web-Based Platform (MERN Stack + React)

- Works across desktop and mobile devices.
- Modular and scalable development approach.
- Responsive design ensures cross-platform accessibility.

b) Cloud-Based Solution (AWS, Firebase, or Google Cloud)

- Ensures scalability and data synchronization.
- Provides security, storage, and backup.
- High availability and fault tolerance.
- Real-time hosting for feeds and notifications.
- Supports future AI-driven recommendations.

10) Advantages/ Disadvantages:

Advantages:

- **Core Social Media Features – Posts, likes, comments, and follows.**
- **Real-Time Interactions – Instant notifications and feed updates.**
- **User-Friendly – Simple, lightweight, and intuitive UI.**
- **Scalability – Can handle more users as the platform grows.**
- **Strong Security – JWT authentication, bcrypt password hashing.**
- **Cloud Deployment – Reliable, fast, and globally accessible.**

Disadvantages:

1. **Limited Features – Lacks advanced features like stories or groups (initially).**
2. **Scalability Costs – More users mean higher cloud infrastructure expenses.**
3. **Internet Dependency – Requires stable internet for real-time updates.**

4. **User Engagement Risk – Without advanced features, users may lose interest.**
5. **Data Privacy Concerns – Social media always faces risks of data misuse.**

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11)REFERENCES

- **Node.js:** Official Documentation
- **Express.js:** Documentation
- **MongoDB:** Basics
- **EJS:** Documentation
- **GitHub Actions:** Documentation
- **React:** Documentation