**Social-x: A MERN-Based Social Media Platform**

**1. Introduction**

* Project Title: Social-x
* Developer: Amit Niranjan (MERN Stack Developer)

**2. Project Overview**

Purpose

Social-x is a feature-rich social media platform designed to provide users with seamless connectivity, real-time interactions, and content sharing. It includes functionalities similar to Instagram, enabling users to post, comment, like, and interact with content effortlessly.

Features

* User Authentication (Signup/Login using JWT)
* Profile Management (Edit profile, upload profile picture, bio)
* Post Creation (Upload images, videos, and captions)
* Like & Comment System
* Follow & Unfollow Users
* Real-time Chat (Using WebSockets)
* Story Feature (Similar to Instagram stories)
* Explore Page (Discover trending posts)
* Notifications (Real-time notifications for likes, comments, and follows)

**3. Technology Stack**

Frontend

* React.js (Component-based UI)
* Tailwind CSS (Styling)
* Axios (API communication)

Backend

* Node.js & Express.js (API development)
* MongoDB with Mongoose (Database management)
* JWT Authentication (User authentication security)
* Socket.IO (Real-time messaging)

**4. Installation Guide**

Prerequisites

* Node.js
* MongoDB
* NPM/Yarn

Steps to Install

1. Clone the repository.
2. Install dependencies (npm install or yarn).
3. Set up environment variables (MongoDB URI, JWT secret, etc.).
4. Start frontend (npm start in client/ folder).
5. Start backend (npm start in server/ folder).

**5. Folder Structure**

Client Folder (Frontend)

* public/: Static assets (HTML, icons, images)
* src/: Source code folder
  + components/: Reusable UI components (buttons, forms, posts, etc.)
  + pages/: Different screens like login, profile, home, explore
  + redux/: State management logic
  + styles/: Global CSS styles
  + App.js: Root component
  + index.js: Entry point file

Server Folder (Backend)

* controllers/: Handles business logic for authentication, posts, and users
* models/: Defines MongoDB schemas (User, Post, Comment)
* routes/: API endpoints (Auth, Posts, Users, Comments)
* middleware/: JWT authentication handling
* socket/: Manages real-time chat
* index.js: Entry point for the backend server

**6. API Endpoints**

Authentication

* POST /api/auth/signup – Register a new user
* POST /api/auth/login – Login user

User Management

* GET /api/users/:id – Get user profile
* PUT /api/users/update/:id – Update user profile

Post Management

* POST /api/posts – Create a new post
* GET /api/posts – Fetch all posts
* DELETE /api/posts/:id – Delete a post

Social Interactions

* POST /api/posts/:id/like – Like a post
* POST /api/posts/:id/comment – Comment on a post
* POST /api/users/:id/follow – Follow a user

Messaging

* GET /api/messages/:userId – Fetch user messages
* POST /api/messages/send – Send a message

**7. Authentication & Security**

* JWT Authentication for secure API access
* Middleware for protected routes
* Data Encryption for passwords using bcrypt.js

**8. User Interface (UI/UX)**

* Modern, minimal design for better user experience
* Dark/Light mode support
* Mobile responsive layout

**9. Testing**

* Jest for unit testing React components
* Supertest for backend API testing

**10. Future Enhancements**

* Reels Feature (Short video uploads)
* AI-based Recommendations (Personalized feed)
* Live Streaming
* Monetization Features (Ads, Subscriptions)

**11. Demo & Screenshots**

<https://drive.google.com/drive/folders/1GSUhRDPk_t2nCtOUvcOsieapGpUW2s_5>

**12. Known Issues**

* Occasional lag in real-time messaging
* Minor UI glitches in mobile view

Social-x is designed to be a scalable and user-friendly social media platform, ensuring a smooth and interactive experience for users.