YouTube Clone - MERN Stack Project Documentation

NAME : SANTOSH TOTAD

1. Introduction

Project Overview

This project is a YouTube Clone built using the MERN (MongoDB, Express.js, React.js, Node.js) stack. The application allows users to view, upload, interact with videos, and manage their own channels.

Objectives

- Develop a full-stack web application that mimics YouTube's core features.
- Implement secure authentication using JWT.
- Enable video uploading, viewing, commenting, and interaction.
- Ensure smooth API interactions with MongoDB for data storage.
- Provide a responsive and user-friendly UI.

Technologies Used

2.1 Frontend

- **React.js** - UI library for building interactive components.
- **React Router** - Handles routing within the application.
- **Axios** - For API requests.
- **CSS/Tailwind** - Styling for UI components.

2.2 Backend

- **Node.js** - JavaScript runtime for backend processing.
- **Express.js** - Backend framework for handling API requests.

- **MongoDB** - NoSQL database for storing user and video data.
- **Mongoose** - ODM for MongoDB to manage data schema.
- **JWT** - Secure authentication for user login.

API Endpoints

User Authentication

- POST /register - Register a new user.
- POST /login - User login, returns a JWT token.

Channel Management

- POST /channel - Create a new channel.
- GET /channel/:id - Get channel details by ID.

Video Management

- POST /videos - Upload a new video.
- GET /videos/:id - Get video details.
- DELETE /videos/:id - Delete a video.

Comments

- POST /comments - Add a comment.
- GET /comments/:videoId - Get comments for a video.

. User Authentication (JWT)

- **Login** and **Register** API securely authenticate users.
- JWT token is stored and used for secure access to protected routes.
- Middleware protects API routes requiring authentication.

. Frontend Implementation

7.1 React Components

- **HomePage** - Displays video grid.
- **VideoPlayer** - Video playback and comments.
- **AuthForm** - Handles login/register.
- **ChannelPage** - Shows channel info and videos.

Search & Filter Functionality

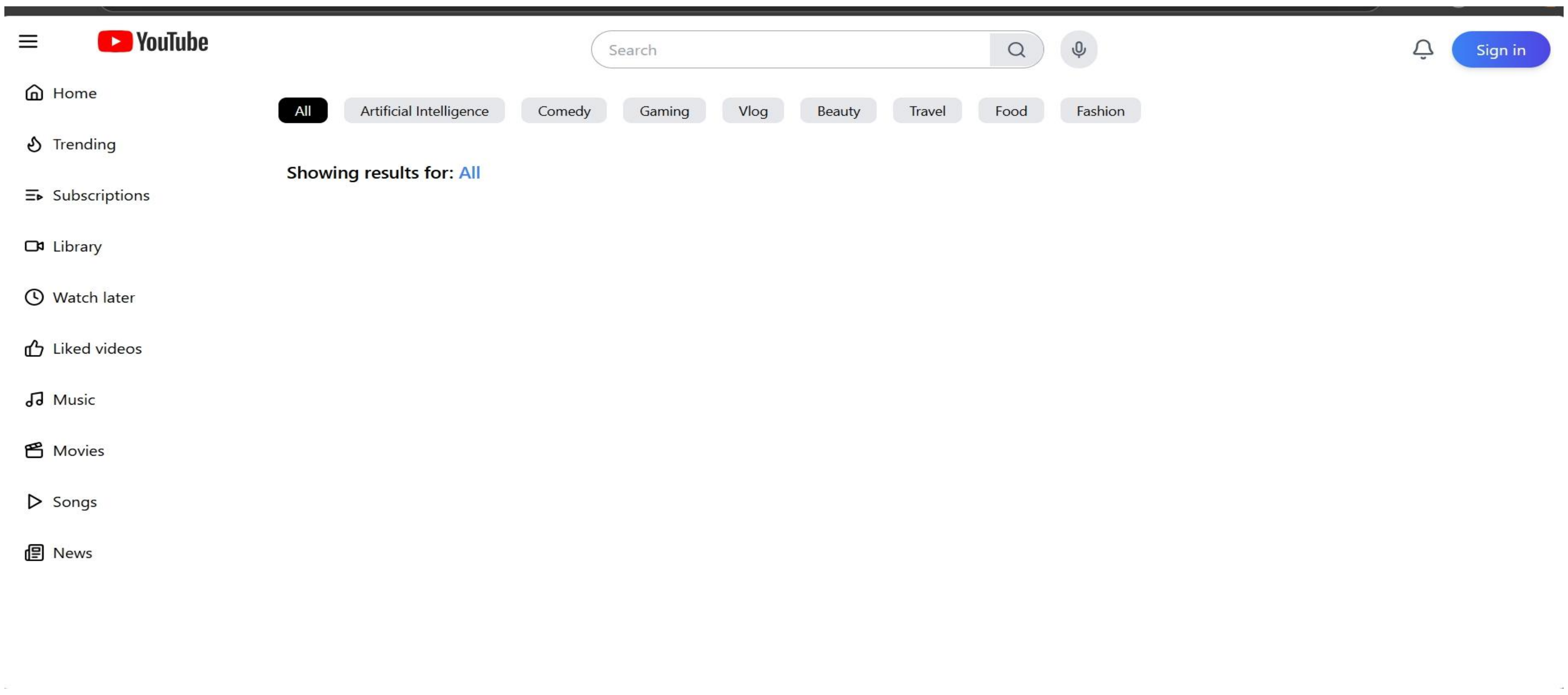
- **Search by title**: Implemented using a search bar.
- **Filter by category**: Allows users to filter videos based on categories.

Responsiveness

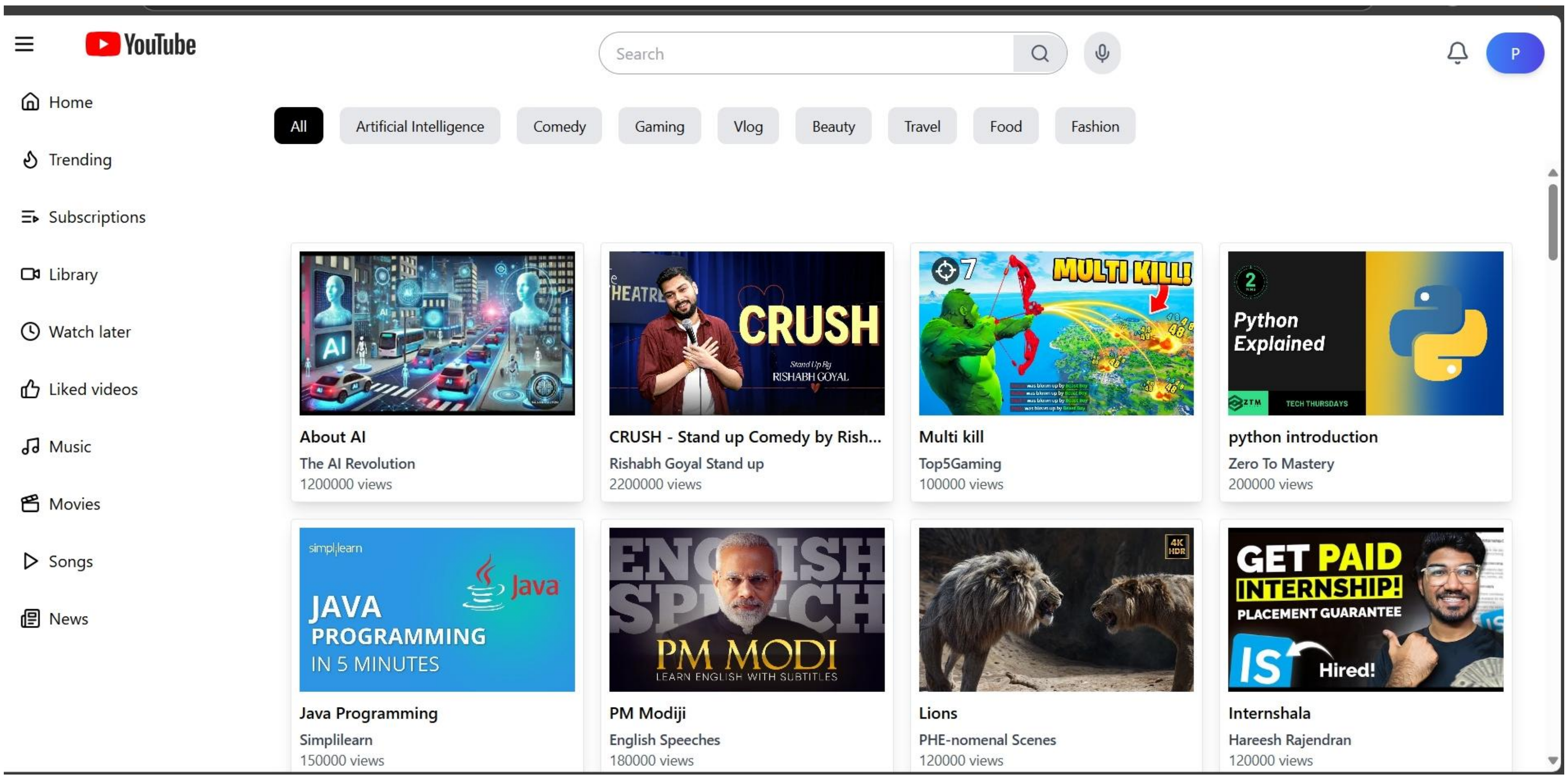
- UI adapts to **mobile, tablet, and desktop** screens.
- **CSS Flexbox and Grid** used for layout.
- Media queries ensure elements resize properly.

PROJECT IMAGES

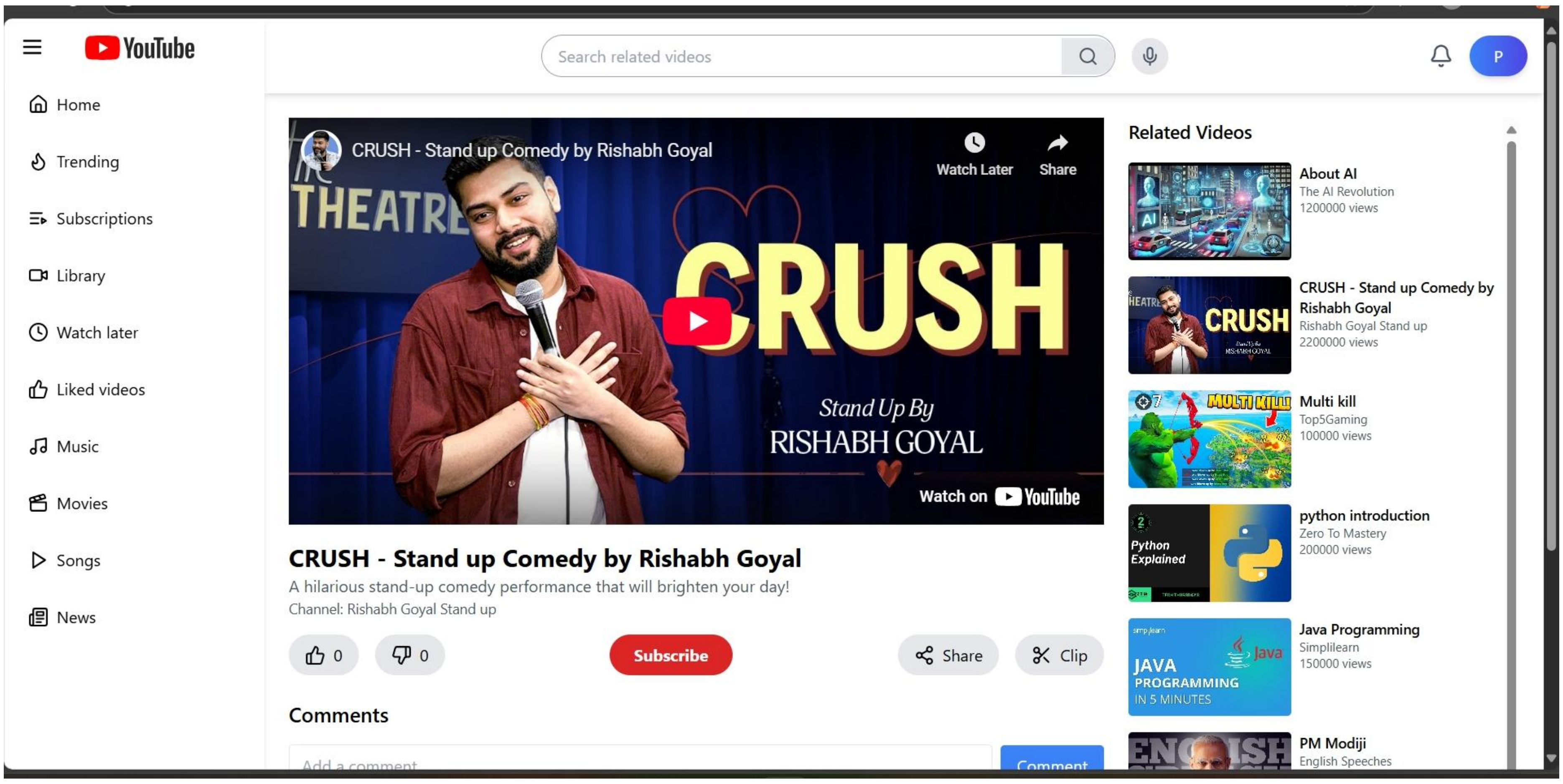
1.SIGNIN PAGE



2.HOMEPAGE



3.VIDEOPLAYER PAGE



CRUSH - Stand up Comedy by Rishabh Goyal

A hilarious stand-up comedy performance that will brighten your day!

Channel: Rishabh Goyal Stand up

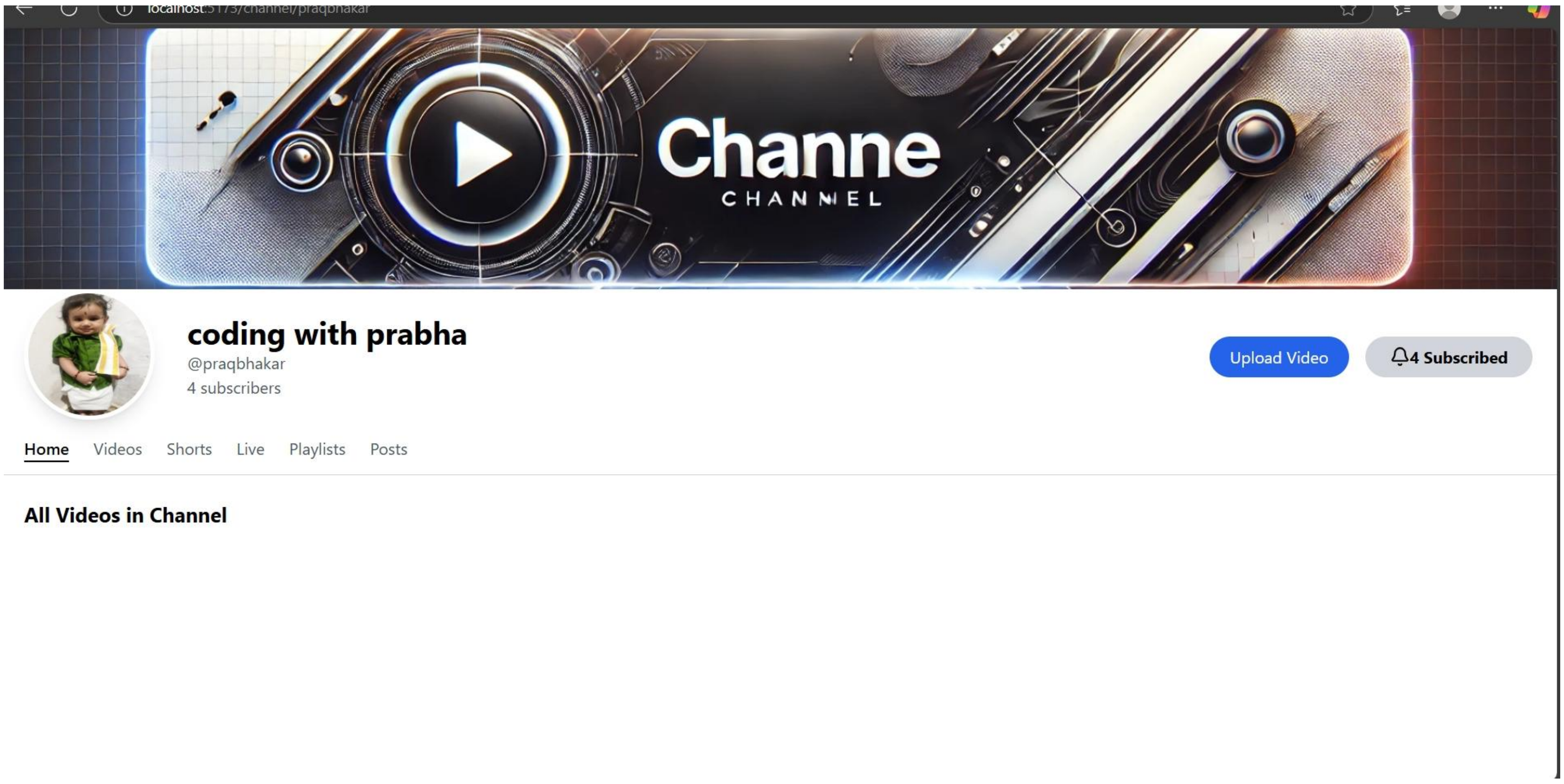
Comments

Add a comment

Related Videos

About AI	The AI Revolution 1200000 views
CRUSH - Stand up Comedy by Rishabh Goyal	Rishabh Goyal Stand up 2200000 views
Multi kill	Top5Gaming 100000 views
python introduction	Zero To Mastery 200000 views
Java Programming	Simplilearn 150000 views
PM Modiji	English Speeches

4.CHANNEL PAGE



coding with prabha

@praqbhakar

4 subscribers

All Videos in Channel

Conclusion

- The YouTube Clone successfully integrates **frontend, backend, authentication, and database**.
- Users can **sign up, upload videos, comment, and interact** with content.
- Future improvements: **Live streaming, advanced recommendation system, and notifications**.