

# Reddit Clone - Project Report

**Course:** Web Development (CSE343)

**Academic Year:** Fall 2025

**Project Type:** MERN Full-Stack Web Application

## Team Members

Name	Student ID	Contributions
Ali Ibrahim Ahmed	23P0217	Comments system, Sidebar component
Ali Hatem Tahssin	23P0342	Navbar, User authentication, Login system
Eyad Mohamed Ahmed	23P0207	All community-related features
Youssef Wael Youssef	23P0286	Profile page, Profile editing functionality
Youssef Lotfy Elsayed Aly	23P0216	Database design, All post-related features

## Project Overview

This project is a full-stack web application that replicates the core functionality of Reddit. The application allows users to create accounts, join communities, create posts, comment on posts, and interact through a voting system. The UI closely matches the actual Reddit interface.

# Features Implemented

## Basic Requirements

1. **Account Creation and Login** - User registration and authentication with JWT tokens
2. **Viewing/Editing User's Profile** - Viewing and editing user profiles with karma system, posts, comments, and voting history
3. **Creating a Community** - Users can create new communities with name, description, logo, and background image
4. **Joining/Leaving a Community** - Users can join or leave communities they are interested in
5. **Creating a Post on a Community** - Users can create posts with title, description, and image on communities they belong to
6. **Viewing Posts of a Community** - Users can view all posts within a specific community
7. **Viewing Feed Page** - Users can view a feed page displaying all posts from communities they follow
8. **Upvoting/Downvoting Posts** - Users can upvote or downvote posts to show their preference
9. **Commenting on Posts** - Users can comment on posts with nested reply functionality
10. **Searching for Communities and Users** - Users can search for communities and other users through the search functionality

## Team Contributions

### Ali Ibrahim Ahmed (23P0217)

- Implemented the complete comments system including nested replies
- Developed the sidebar component with community navigation
- Created comment voting functionality

### Ali Hatem Tahssin (23P0342)

- Built the navbar component with search and user menu
- Implemented user authentication system (register/login)
- Created JWT token management and protected routes

### Eyad Mohamed Ahmed (23P0207)

- Developed all community-related features
- Implemented community creation, joining, and management
- Built community pages and search functionality

### Youssef Wael Youssef (23P0286)

- Created user profile pages with tabbed interface
- Implemented profile editing functionality
- Developed profile update system with avatar selection

### Youssef Lotfy Elsayed Aly (23P0216)

- Designed and implemented the complete database schema
- Built all post-related features (create, edit, delete, vote)
- Developed home page feed and post display components

# Project Architecture

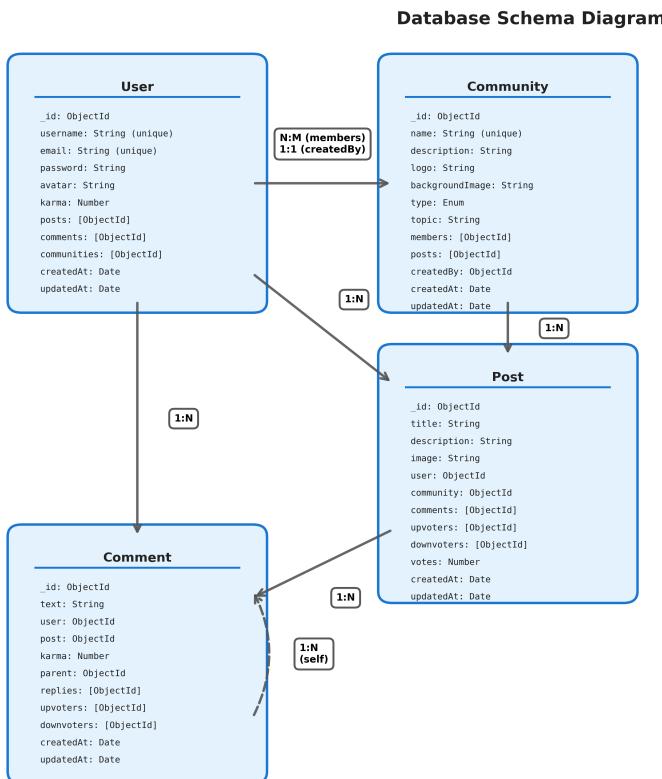
The application follows a three-tier architecture:

- **Frontend:** React-based single-page application with component-based architecture
- **Backend:** RESTful API with Express.js using MVC pattern
- **Database:** MongoDB with Mongoose ODM for data persistence

## Database Schema

The application uses four main models:

- **User** - Stores user accounts with karma, posts, comments, communities, and voting history
- **Post** - Contains posts with voting arrays, community association, and comments
- **Comment** - Nested comments with parent-child relationships and voting
- **Community** - Community information with members, posts, and settings



For detailed database schema, refer to the models in `backend/src/models/`.

## API Documentation

Complete API documentation is available in `API_DOCUMENTATION.md`. The API includes endpoints for:

- User management (register, login, profile)
- Post operations (create, read, update, delete, vote)
- Comment operations (create, read, vote, delete)
- Community operations (create, join, leave, view)

## Conclusion

This project successfully demonstrates a full-stack web application using React, Node.js, and MongoDB. The application includes all basic requirements of a Reddit clone with user management, content creation, community building, and social interaction through voting and commenting systems.

The project demonstrates proficiency in modern web development technologies and successful team collaboration with clear division of responsibilities.