Overview of MERN App and RAG Chatbot

1. MERN App (TSS - Accounting Management System)

1. Initialized a MERN stack project with MongoDB, Express, React, and Node.js.

2. Designed the backend with models for Business, Expense, Payroll, Revenue, etc.

3. Implemented REST APIs for CRUD operations and business logic.

4. Built frontend using React with TailwindCSS and Material UI for a professional UI.

5. Integrated real-time features (chat, notifications) using Socket.IO.

6. Added role-based access control and business-owner/accountant assignments.

7. Implemented Stripe for payment and RabbitMQ for async communication between services.

8. Set up CI/CD pipelines with Jenkins, SonarQube, Nexus, Docker, and deployment to Docker Hub.

9. Created a dashboard with financial analytics using charts and compact card components.

10. Added forecasting by running a Python script from Node.js using `child_process`.

2. RAG Chatbot with Cohere API

1. Gathered domain-specific data (e.g., business rules, user guides) as context.

2. Embedded documents using Cohere's embedding API to generate vector representations.

3. Stored these vectors in a vector database (e.g., Pinecone, Weaviate, or custom).

4. When a user asks a question, embed the query using Cohere.

5. Perform a similarity search in the vector store to retrieve relevant documents.

6. Combine retrieved context with the user's question and send it to Cohere's generate API.

7. Display the response in the chatbot UI.