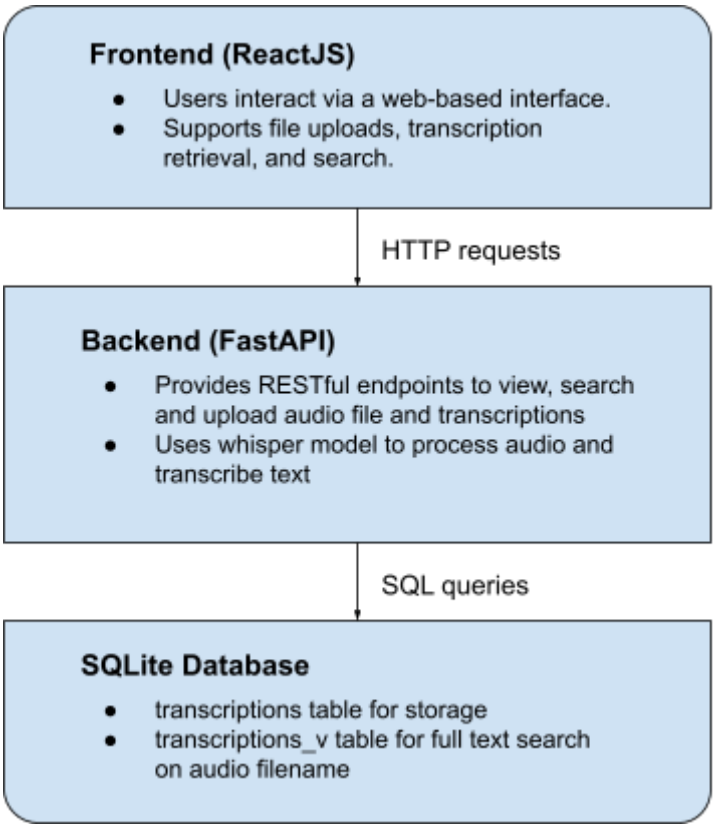
# Architecture




**Containerization:**

The application is fully containerized using Docker, providing consistent environments for development, testing, and deployment.

Docker Compose is used to orchestrate the containers.

**Monolithic Backend:**

The backend is structured as a monolith, with the API gateway and business logic within the same FastAPI application.

For larger applications, a microservices architecture could be considered.

**SQLite3 Limitations:**

SQLite3 is suitable for small to medium-sized applications.

For applications with high concurrency or large data volumes, a more robust database (e.g., PostgreSQL, MySQL) might be necessary.

**Testing Strategy:**

Separate Docker containers are used for backend and frontend testing, ensuring isolated test environments.

This setup is suitable for CI/CD pipelines, providing consistent test results.

**CORS Handling:**

CORS middleware is implemented in the FastAPI backend to allow cross-origin requests from the React frontend.

**Environment Variables:**

Environment variables are used to configure the application, such as the API URL for the frontend and database settings for the backend.

**Deployment:**

The containerized application can be deployed to various environments, including cloud platforms (e.g., AWS, Google Cloud, Azure) and on-premises servers.

**API URL:**

The frontend uses the REACT_APP_API_URL environment variable to connect to the backend, allowing for easy configuration across environments.

**FFMPEG:**

FFMPEG is installed within the backend docker container, in order to handle the audio files.