**Reading guide**

The flight search engine project is a web application that allows users to search for flights based on their departure and arrival cities, dates, and number of passengers. The project is built using Java in spring boot for the backend and React for the frontend using JavaScript for additional functionality.

**Technical Requirements:**

Java 17 or later

Spring Boot 2.x

React 18.x

Node.js 16.x

npm 8.x

**Backend**:

The backend server is built using Java and Spring Boot. The server handles all the flight search requests made by the client and communicates with the flight database and external API to retrieve the relevant information.

Spring Boot is used to handle the HTTP requests and responses, and to configure the application.

Spring Data JPA is used to interact with the database.

Spring Security is used to handle authentication and authorization of the users.

**Frontend**:

The frontend of the application is built using React and JavaScript. The user interface is composed of a search form, a results page, and a profile page for each user.

React is used to build the user interface and handle the component state.

JavaScript is used to add additional functionality such as date pickers and form validation.

MUI is used for styling and responsive design.

**Flight Search Engine:**

The flight search engine is implemented using an algorithm that calls and external API based on the user's search criteria and returns the most relevant results. The algorithm takes into consideration factors such as flight duration, price, and number of passengers.

**Testing and Deployment:**

JUnit and Mockito are used for unit and integration testing of the backend.

Cypress is used for end-to-end testing.

The application is deployed to docker hub.

**Conclusion:**

The flight search engine project is a fully functional web application that allows users to search for flights based on their preferences. The project demonstrates the use of Java, Spring Boot, React, and JavaScript in building a modern web application.