

Step-by-Step Implementation Guide

1. Prerequisites

- Ensure **Node.js** and **npm** are installed on the system.
- Have **MongoDB** available (either locally or via a service like MongoDB Atlas).
- Google credentials for OAuth2, set up on Google Developer Console. (Note: For configuration of OAuth: Authorised JavaScript origins section: Give the backend URL on which your server is running (eg: `http://localhost:3000`), Authorised redirect URIs section: Give the base backend URL on which your is running and append it with `/auth/callback` (eg: `http:localhost:3000/auth/callback`)

2. Setup Environment Variables

Create a `.env` file in the root directory with the following variables:
plaintext

```
GOOGLE_CLIENT_ID=<Your Google Client ID>
GOOGLE_CLIENT_SECRET=<Your Google Client Secret>
SESSION_SECRET=<Your Session Secret> (//can be any string)
GMAIL_USER=<Your Gmail for Notification Service>
GMAIL_PASS=<Your Gmail App-Specific Password>
MONGO_DB_URI=<Your MongoDB connection string>
REACT_APP_URI=<FRONTEND URI> //frontend URL on which frontend
is running(eg: 'http://localhost:3001')
REACT_APP_API_URI=<BACKEND URI> //backend URL on which backend
is running(eg: 'http://localhost:3000')
```

In the **frontend** directory, create another `.env` file with the following variables:

```
REACT_APP_API_URI=<BACKEND URI>
```

```
//backend URL on which backend is running (without using
quotes or space between '=' and the URI)
(eg:REACT_APP_API_URI=http://localhost:3000)(Note: make sure
there are no spaces and the URI is not within quotes.)
```

3. Install Dependencies

From the **root** directory:

Run:

npm install //to install the node package modules in root directory

From the **frontend** directory:

Run:

npm install //to install the node package modules in frontend directory

4. Start the Backend Server

In the backend root directory:

Run:

node app.js

- This starts the Node.js server, accessible at the backend URI (eg: <http://localhost:3000>)

5. Start the Frontend Application

In the frontend directory:

Run:

npm start

- This starts the React frontend, accessible at the frontend URI (eg: <http://localhost:3001>)

6. Folder Structure Overview (for details on each file, refer to inline documentation and comments given in their respective files.)

- **Root Folder:**
 - `app.js`: Core backend configuration.
 - `authService.js`: Handles Google authentication (SSO Authentication Microservice)
 - `purchaseService.js`: Contains purchase request CRUD and notification functionality. (Purchase Microservice)
 - `notificationService.js`: Sends email notifications. (Notification Microservice)
 - `models/purchaseRequest.js`: Purchase request schema and model. (Database Schema for MongoDB Database)
- **frontend/src folder:**
 - `App.js`: Main routing for the application.

- App.css: For styling App.js
- Dashboard.jsx, ManagerDashboard.jsx, CreateRequest.jsx, ChooseRole.jsx, MessageModal.jsx: Core components for different user roles:

Dashboard.jsx: For Requester Dashboard

ManagerDashboard.jsx: For Approver Dashboard

CreateRequest.jsx: For creating a purchase request (form)

ChooseRole.jsx: For allowing the user to choose to navigate to either requester or approver dashboards.

MessageModal.jsx: For displaying suitable messages wherever needed.

- styles.css: Styling for the for all the above 5 jsx files.