Class Name: GoogleService

Parent Class (if any): None

Subclasses (if any): None

Responsibilities:

- Generate Google OAuth URL for authentication

- Exchange authorization code for access and refresh tokens

- Fetch all busy calendar events for the next month

- Calculate and return available time slots

- Initialize Google Calendar API client using access token

Collaborators:

- Google Calendar API (external)
- GoogleController

Class Name: GoogleController

Parent Class (if any): None

Subclasses (if any): None

Responsibilities:

- Redirect user to Google OAuth authentication

- Handle OAuth callback and return access token

- Call service method to fetch free time slots

- Return results to frontend with appropriate error handling

Collaborators:

- GoogleService

- Frontend (React components)

Class Name: FreeSlots (React Component)

Parent Class (if any): None

Subclasses (if any): None

Responsibilities:

- Fetch available time slots from backend API

- Display time slots in a user-friendly format

- Handle loading states and display errors

- Redirect to login if access token is missing or expired

Collaborators:

- GoogleController (Backend API)

- Local storage for token management

Class Name: App (React Component)

Parent Class (if any): None

Subclasses (if any): None

Responsibilities:

- Initiate Google Calendar connection flow

- Exchange authorization code for access token

- Store and manage access token in local storage

- Redirect to free slots page after authentication

Collaborators:

- GoogleController (Backend API)

- React Router (navigate)