Maharashtra District Map Viewer — Project Documentation

Overview

This is a responsive web application built with **React.js** and **React-Leaflet** that visualizes a map of **Maharashtra**, India. The application allows users to **select a district** from a dropdown menu, and the map automatically **zooms in and highlights** the corresponding district.

Technologies Used

- **React.js** – Frontend framework
- **React-Leaflet** – Interactive map rendering
- **Leaflet.js** – Map library for spatial rendering
- **GeoJSON** – District boundary data
- **Axios** – API calls for dynamic data fetching
- **HTML/CSS** – UI design and responsiveness

Key Features

- **Responsive UI** for desktop and mobile users
- **Dropdown** to select any district in Maharashtra
- **Auto-zoom** to selected district using Leaflet's fitBounds
- **GeoJSON rendering** for district boundaries
- **Custom map styling** and interactivity

Map Integration

- The application uses react-leaflet to render the base map.
- A GeoJSON file is used to display **district-level boundaries** within Maharashtra.
- The MapContainer component holds the map logic and district rendering.

Data Format

The app uses a GeoJSON file containing:

```
{
  "type": "FeatureCollection",
  "features": [
    {
      "type": "Feature",
      "properties": {
        "dtname": "Pune"
      },
      "geometry": {
        "type": "Polygon",
        "coordinates": [ ... ]
      }
    }
  ]
}
```

- dtname → District name used for dropdown and filtering

District Selection + Auto Zoom

When a user selects a district from the dropdown, the app:

1. Searches the corresponding district in the GeoJSON.
2. Creates a Leaflet layer for that feature.
3. Uses map.fitBounds() to zoom into the district's bounds.

This logic is implemented inside a custom AutoZoom component using useMap() and useEffect() from react-leaflet.