

Google Maps MVC Documentation

Overview

The Google Maps MVC application allows users to interact with a Google Map interface, select a location, and view the latitude and longitude coordinates of the selected point. The application is built using the Model-View-Controller (MVC) architectural pattern for clear separation of concerns and maintainability.

Files

1. **map.html**: The main HTML file containing the structure and user interface of the application.
2. **map_model.js**: JavaScript file defining the data model for the application.
3. **map_view.js**: JavaScript file handling the UI logic and rendering.
4. **map_controller.js**: JavaScript file managing application logic and user interactions.

Components

1. Model (map_model.js)

- **MapModel Class**: Defines the data model for the application.
 - **Properties**:
 - **latitude**: Holds the latitude value of the selected location.
 - **longitude**: Holds the longitude value of the selected location.

2. View (map_view.js)

- **MapView Class**: Handles the UI logic and rendering.
 - **Properties**:
 - **mapElement**: DOM element representing the Google Map.
 - **latClickedElement**: DOM element to display the clicked latitude.
 - **longClickedElement**: DOM element to display the clicked longitude.
 - **latMovedElement**: DOM element to display the moved latitude.
 - **longMovedElement**: DOM element to display the moved longitude.
 - **Methods**:
 - **initMap(center)**: Initializes the Google Map with the provided center coordinates.
 - **updateClickedPosition(lat, long)**: Updates the clicked latitude and longitude values in the UI.
 - **updateMovedPosition(lat, long)**: Updates the moved latitude and longitude values in the UI.

3. Controller (map_controller.js)

- **MapController Class:** Manages application logic and user interactions.
 - **Properties:**
 - model: Instance of the MapModel class.
 - view: Instance of the MapView class.
 - **Methods:**
 - initMap(): Initializes the Google Map and sets up event listeners.
 - handleMapClick(event): Handles the click event on the Google Map, updating UI with clicked coordinates.
 - handleMapMouseMove(event): Handles the mousemove event on the Google Map, updating UI with moved coordinates.

Usage

1. Open the map.html file in a web browser.
2. The Google Map will be displayed in the application interface.
3. Click on the map to view the latitude and longitude of the clicked location.
4. Move the mouse over the map to view the latitude and longitude of the current mouse position.
5. Enter latitude and longitude values manually and click "Submit" to submit the selected coordinates.

Dependencies

- **Google Maps JavaScript API:** The application relies on the Google Maps JavaScript API to display the map and handle user interactions. Ensure a valid API key is provided in the <script> tag for proper functionality.