

# **City Explorer with Guided Tours - Project Documentation**

## **Overview**

The City Explorer with Guided Tours is a web application designed to assist tourists in exploring various cities through guided tours. It leverages the HERE Maps API for map rendering, location services, and Points of Interest (POI) discovery. This document explains the project's functionality, its core features, and how it achieves its objectives.

## **Objectives**

- **Dynamic Location-Based Services:** Automatically detect the user's current location to display nearby points of interest and provide a personalized experience.
- **Custom Tour Creation:** Enable users to create custom tours by selecting specific tourist spots they wish to visit.
- **Interactive Map Interface:** Offer an intuitive map interface where users can search for places, see detailed information about tourist spots, and navigate through selected tours.

## **How It Works**

### **Initial Setup and Map Display**

Upon loading the webpage, the application:

- Initializes the HERE Map in the browser, setting the user's current location as the center if available; otherwise, it defaults to a predefined location.
- Incorporates a responsive design, ensuring that the map and sidebar adjust to the screen size for optimal viewing.

## **User Location Detection**

- The application attempts to fetch the user's current location using the browser's geolocation API.
- If successful, the map centers on this location and fetches nearby points of interest.
- In case of failure, a default location is used as the fallback.

## **Points of Interest (POI) Discovery**

- Utilizes the HERE Places API to fetch POIs based on the user's location or a specified area.
- Displays these POIs on the map with markers, allowing users to visually identify different spots.

## **Custom Tour Functionality**

- Users can search for specific places using the search functionality, which uses the HERE Geocoding service to locate and center the map on the searched location.
- The sidebar provides options to create custom tours by adding desired tourist spots from the displayed POIs or through search results.
- Each selected spot can be added to a custom tour, with the application providing route calculation between selected points using the HERE Routing API.

## **Interactivity and Information Display**

- Interactive markers on the map represent tourist spots. Clicking on a marker displays an information bubble with details about the spot, such as its name and a brief description.
- The application supports creating multiple custom tours. Users can select a tour to display its route and all associated points on the map.

## Key Features and Technologies

- HERE Maps API: Used for map rendering, location services (geocoding, reverse geocoding), POI discovery, and routing.
- Dynamic User Location: Enhances user experience by automatically detecting and centering the map on their current location, providing immediate access to local attractions.
- Customizable Tours: Users can personalize their exploration experience by creating custom tours, choosing which attractions to visit, and viewing the calculated route.
- Responsive Design: The application adapts to various screen sizes, ensuring a seamless experience across devices.