# Barcelona

## Overview

This project aims to develop a web-based communication tool tailored for the city of Barcelona. The tool will focus on communicating the progress of city interventions, measuring public satisfaction, and providing a visual comparison of neighbourhoods before and after interventions using 360-degree images and videos. The application will offer a 2D navigational interface with interactive hotspots that link to detailed information and immersive virtual tours. Unlike the Alverca project, the Opinion Gathering System (OGS) in this tool will gather overall feedback for the entire project rather than individual hotspots. Below is a detailed implementation plan, focusing on the functional requirements as derived from the provided data and additional information.

## Functional Requirements

1. **Use Cases:**
   - **Communicate Project Progress:**
     - Provide detailed updates on city interventions, showcasing the transformation of neighbourhoods.
     - Utilize 360-degree images, historical data, and videos to compare the state of areas before and after interventions.
   - **Measure Public Satisfaction:**
     - Implement a unified Opinion Gathering System (OGS) where citizens can rate and provide feedback on the overall project.
     - Use rating scales and text input fields to capture citizen satisfaction and suggestions.
2. **Scope:**
   - **Current Project Focus:**
     - Emphasize the ongoing interventions and their impact on various areas.
   - **Future Enhancements:**
     - Potentially expand to cover future projects and additional areas within the city.
3. **Technical Specifications:**
   - **2D Navigation with Points of Interest Interaction:**
     - Interactive 2D map to navigate and identify points of interest (hotspots) within the city.
     - Hotspots link to pop-up windows displaying 360-degree images, historical comparisons, information and videos. citizens can:
       - View detailed information and visual comparisons.
       - Access the OGS to provide feedback on the entire project.
4. **Additional Requirements:**
   - **Google 360 History Access:**
     - Incorporate Google 360 history to provide immersive virtual tours and historical comparisons.
   - **Unified Opinion Gathering System:**
     - Centralized OGS accessible from any hotspot, allowing citizens to submit their opinions on the overall project.

# Implementation Plan

1. **Frontend Development:**
   - **Interactive Map Interface:**
     - Develop a user-friendly interface using frameworks like React.js or Angular.
     - Integrate map services (e.g., Mapbox, Leaflet) for cartographic visualization.
   - **Hotspot Pop-ups:**
     - Design pop-up windows to display 360-degree images, historical comparisons, information and videos.
     - Implement navigation controls within pop-ups to view different types of content.
   - **Unified Opinion Gathering System (OGS):**
     - Create a centralized feedback form accessible from any hotspot using tools like Google Forms, Typeform, or custom-built solutions.
     - Implement rating systems and text input fields for qualitative feedback.
2. **Backend Development:**
   - **Data Management:**
     - Set up a database (e.g., PostgreSQL, MySQL) to store information about interventions, feedback, and media assets.
   - **API Development:**
     - Develop RESTful APIs using frameworks like Node.js, Express, or Django to handle data requests and submissions.
   - **360-Degree Image and Video Integration:**
     - Implement functionality to fetch and display 360-degree images and videos, potentially utilizing Google APIs for historical imagery.
3. **Integration and Testing:**
   - **System Integration:**
     - Ensure seamless integration between frontend and backend components.
     - Integrate third-party services for maps, 360-degree images, surveys, and notifications as needed.
   - **User Testing:**
     - Conduct thorough testing with a focus group from the local population to gather initial feedback.
     - Iterate on the design based on user feedback to enhance usability and functionality.
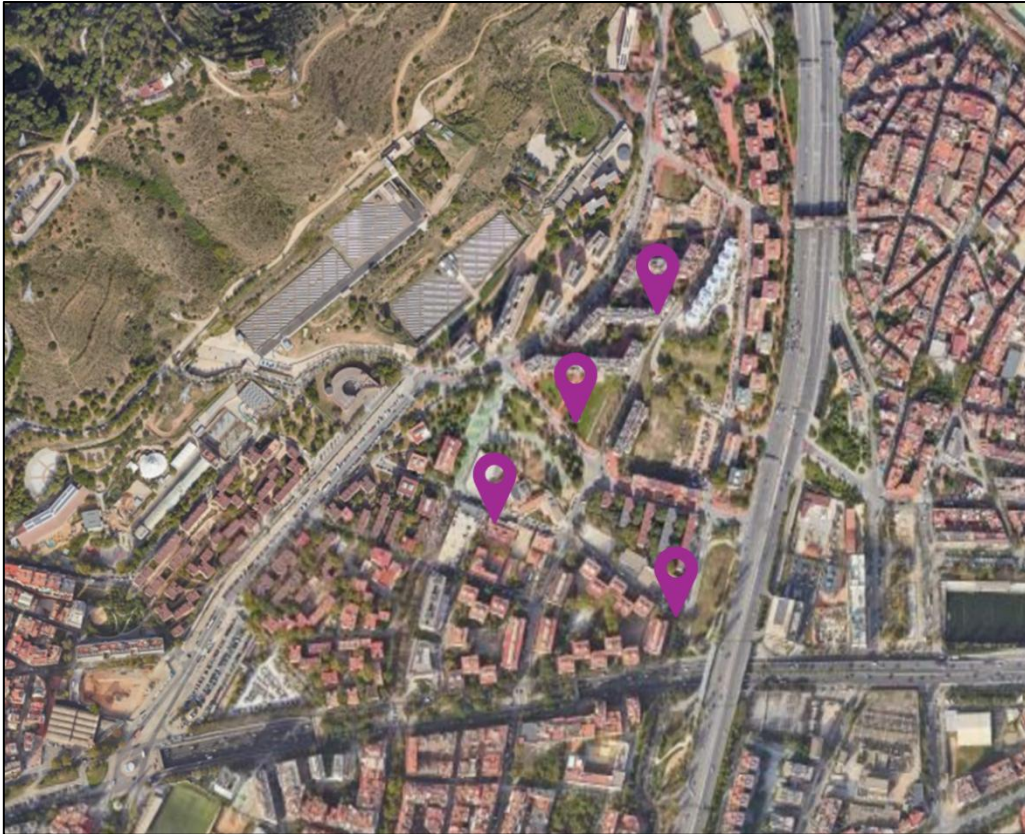4. **Deployment and Maintenance:**
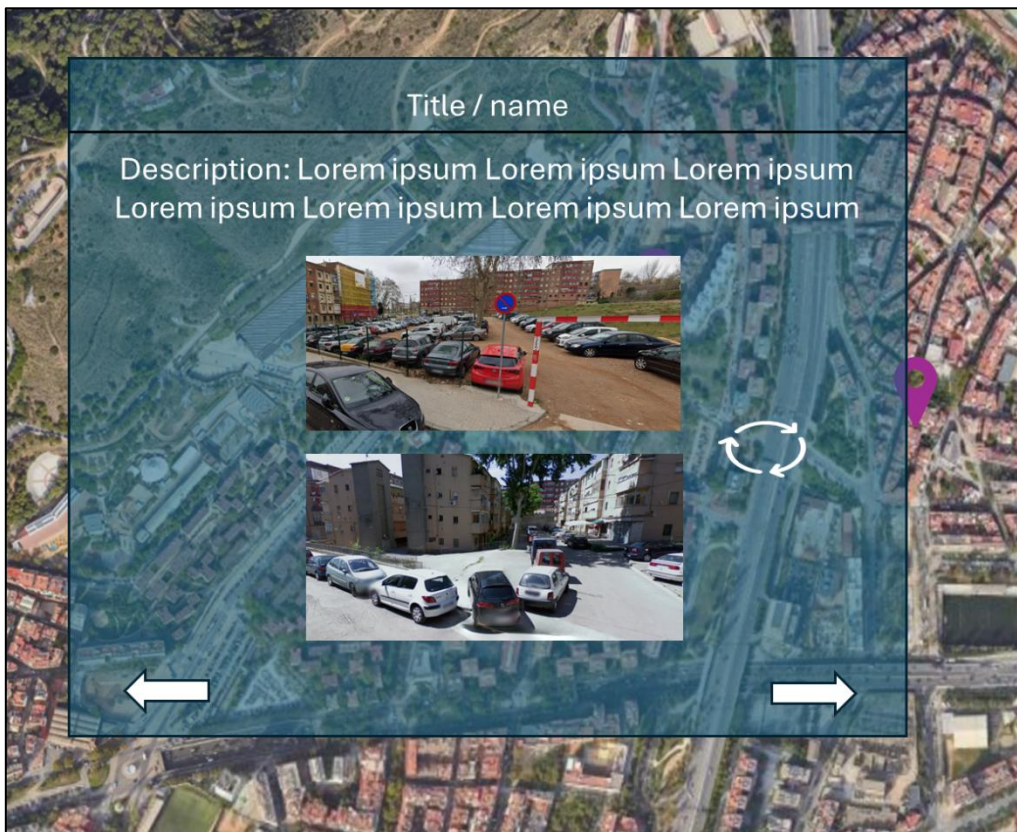   - **Hosting and Deployment:**
     - Deploy the application on cloud services like AWS, Azure, or Google Cloud.
   - **Maintenance and Updates:**
     - Establish a maintenance plan for regular updates and bug fixes.
     - Monitor system performance and user feedback to continuously improve the application.

*Reference image: interface, including cartography and hotspots*



*Reference image: Pop-up shown after clicking over a hotspot*