Offline HTML5 Map

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Project Aims

The project is the development of an offline mapping application leveraging HTML5 offline technologies, such as Web Storage, Service Workers, Cache, and IndexedDB. This map is based on Open Street Map (OSM) data, which is stored in a local database and rendered in real-time using OpenLayers.

Furthermore, the application aspires to provide users with a private platform to record their experiences directly on the map, inspired by the functionality of Google Maps.

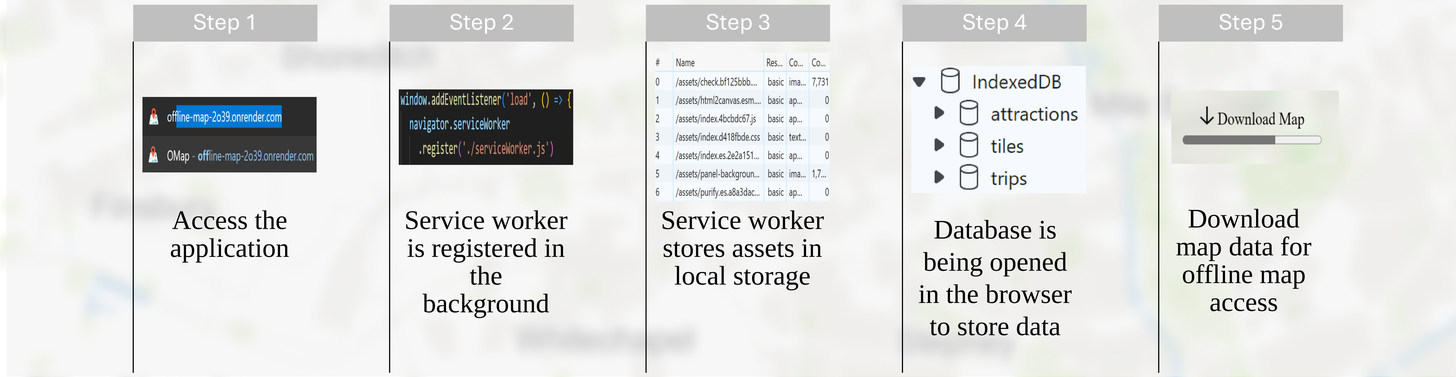
Hypothesis

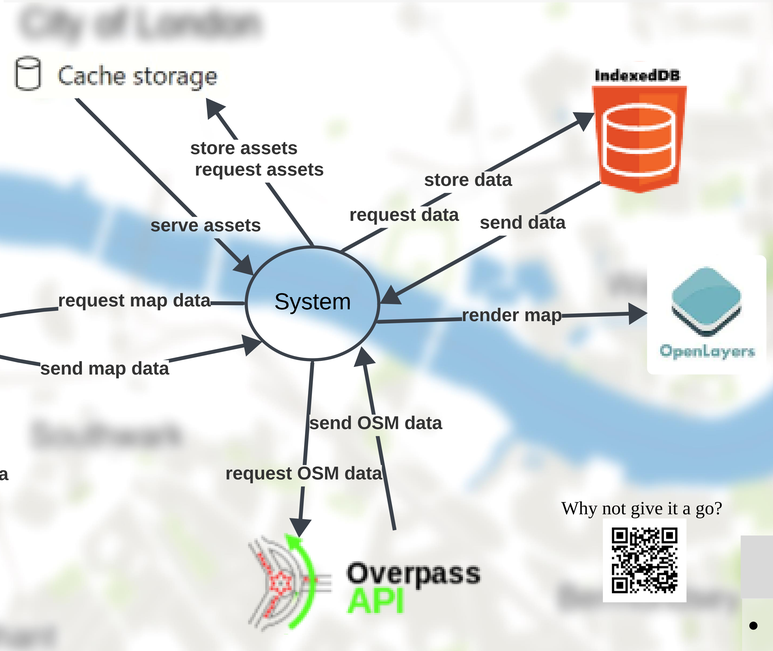
- Use Overpass API to retrieve map data from OSM
- Build Vector Tiles using the OSM data
- Save vector tiles in a central server for download
- Use OpenLayers to render the map in real time
- Store vector tiles and application assets in browser
- Get map data from IndexedDB if available

Project Overview

- Add the app to your home screen for quick access
- Explore the map whilst offline with downloadable London maps
- Discover nearby attractions effortlessly
- Keep your travels alive by adding visited places to the map, with images, rating and description information
- Share you travels and experiences with your friends by downloading the data as a PDF file

Achieving offline functionality. Behind the scenes





Tech Stack and Utilities

Why not give it a go?

Observations

- The service worker does not take control of the page as soon as it is registered
- All assets and libraries used must be cached in the browser for successful rendering
- Vector tile-based maps provide faster rendering times and take less space compared to raster-tile maps

Conclusion

- HTML5 technologies enable the creation of native-app like experiences over the web whilst leveraging the flexibility of the web, also knows and Progressive Web Applications (PWA)
- PWA allows the development of cross-platform application that function seamlessly on various devices and across multiple web browsers
- The compatibility of the application is heavily dependent on the browser version, as HTML5 technologies are only supported on newer versions