The Spot

Description of used technologies and functionalities

# Description of used technologies

The web application “The Spot” uses mapping APIs from different sources. All of them are found in <https://www.programmableweb.com/>. The communication between them and application allow various query searches, resulting in a unified system, which combines all of them into one single environment. This allows the user easier, less time-consuming research on locations around the world. The tools to help accomplish this are:

1. Google Maps - Google’s Java Script development kit is the back-bone of this project. The main product of the API, the map, visualizes all the stored data from the user for better representation;
2. Google Places - a service that returns information about a place. A place search request is used to return candidate matches, while a place details request returns more specific information. In this project the Java Script API is used.
3. Here Places - HERE is a map provider whose maps can be found in car navigation systems, smartphones, and on the web. HERE offers developer access to a variety of map data and functionality through a series of REST APIs. The HERE Places API allows applications to connect their users with HERE places and points of interest data. The API supports text search and provides information such as address, opening hours, contact number, website, and geographic position.
4. Sygic - offers global tourism and travel data available as a consumable database. Over 20 million places from around the world are available. The places are ranked by popularity among travelers. Information such as location, description, photos, admission fees, tags and opening hours is included in the API.
5. Numina /rejected/ - The Numina REST API allows developers to access and integrate the functionality of Numina with other applications. Numina provides insights from sensor data that are real-time from places and streets for traffic information. This API was rejected because it did not match the functionalities needed for this project. The API is intended mainly for traffic information;
6. DigitalGlobe Cloud /rejected/ - defines a set of functions to return actual features with geometry and attributes, to be used in any type of geospatial analysis. It provides raster imagery data at multiple resolutions in predefined imagery tiles in either PNG or JPEG. My DigitalGlobe is a web-based application to quickly and easily view, analyze, and download DigitalGlobe data that is available to you via the EnhancedView Web Hosting Service. Sadly, this API was not used because I did not get access to their data, an email with the authentication credentials for the project was not send back.
7. CMaps Analytics /rejected/ - The CMaps Analytics API offers an integration point for map services such as Google Maps, Mapbox, Leaflet, Carto, ESRI, and more. CMaps Analytics provides low level functionality, diverse data, and over 20 visualization types. Developers can create base maps with any number of layers in order to represent interactions between points and regions. This API was also rejected because it seemed it was no longer supported.

# Description of working functionalities

1. Login - Allows for login of authorized users only (with registered e-mail and password). In order to login and use the system the user must be registered;
2. Register - Allows registering of new users. Once registered the user is navigated to the home page to start using the application;
3. Input validation - almost all input fields in the application have background validation (upon submission) for aiding the user to input correct data;
4. Map navigation - as mentioned above, the back-bone of the application is the Google Maps service and it inherits all of the basic functionalities, zooming, moving, overall navigation;
5. Filtering your library by category - your library possesses Categories list, located in the upper-left corner. From it you can select the desired categories to show in the library for easy search;
6. Filtering your library by text search - next to the Categories list you will see an input field. You can use it to find matches in the name and the description of your records. The filed has the functionality of a search as you type, so it is not obligatory to press the search button;
7. Edit a place in your library - every record in your library can be edited. In the example above, you will see how to navigate to the edit menu and save the desired changes;
8. Image upload - each record stored in the personal database has an image, representing it. The application supports image uploads in different formats (.jpeg, .png and others), converting them into a base64 string to be stored in the database;
9. Delete a place from your library - follow the steps in the upper example to delete a place from your library. Warning: once delete a record cannot be recovered;
10. Search in multiple databases - one of the main functionalities this application was designed for is to enable searching in multiple databases. For now, these databases are Google Places, Here Places and Sigyc;
11. Search controls - in upper part of the Search place menu you will see a few controls: Create place button (for creating a new place), type of search dropdown (types of search are: key-word, coordinates, sentence and address), input for query (text to search for), Search button (initiate search and show results) and all of the search engines in which to search (disabling any of them will result in less results);
12. Key-word search - to search using a key-word, select "Key-word" from the dropdown, enter your query and press search;
13. Sentence search - to search using a key-word, select "Sentence" from the dropdown, enter your query and press search;
14. Coordinates search - to search using a key-word, select "Coordinates" from the dropdown, enter your coordinates (latitude and longitude) and press search;
15. Address search - to search using a key-word, select "Address" from the dropdown, enter your address (city, street, number, etc.) and press search;
16. Create a new place - if you are not able to find the desired place in any of the connected databases (Google Places, Here Places or Sygic) you can add it yourself. Press the Create place button and fill in the fields to add a record to your library;
17. Personal information management - the user has access to his personal information via the Profile view. There he/she can change it;
18. Help menu - designed to aid the user in using the system. The menu contains short visual tutorials on the basic functionalities of the application;