

# Deliverable 2

Group: 404\_Not\_Found

## Part 1: Software Architecture

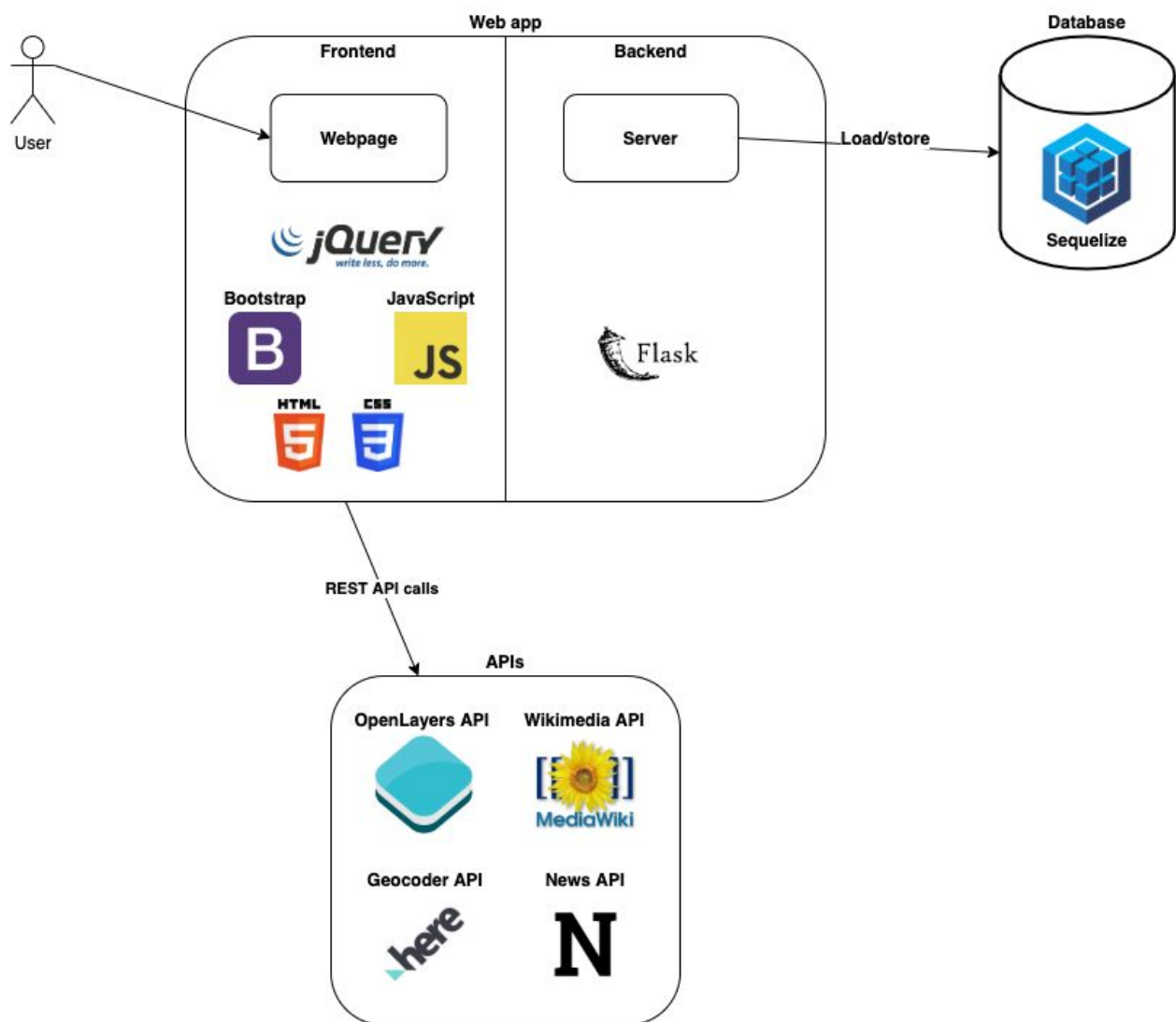
Software Components:

External Data Sources	
Web Scraper	
Beautiful Soup Web Scraper in Python 3	<p>Will be used to retrieve events regarding a particular landmark.</p> <p>There wasn't a single API that returned enough results</p>
APIs	
Wikimedia API	<p>Used to find information and royalty free images on a particular landmark</p> <p>Most comprehensive online datasource, able to search for a vast number of landmarks</p>
Geocoders API	<p>Used to search for landmarks based off coordinates and radius</p> <p>Used to reverse search for landmarks based off a location name</p> <p>Offers coverage for a huge range of countries, is easy to use, and provides all functionality we need</p>

OpenLayers 6 API	Easy way to insert an interactive map into our webpage and has a large library that covers our requirements
News API	Used to find news articles  Searches articles from many different sources from a big range of countries, increasing chances of finding articles about landmarks. Also easy to use and provides searching using various types of queries
Frameworks and Libraries	
Flask	Using familiar tools improves efficiency as it reduces the time spent learning.  Has an easy to implement login system in its library.
Sequelize	A library in Javascript that makes it easier to manage a SQL database.
Languages	
SQLite for database	Not storing large amounts of data or writing in high volumes, therefore PostgreSQL or MySQL aren't as necessary.  Easier to handle, as it doesn't run a server process.
Python 3 for backend	Easy language to work with, allowing more work to be done using less time  Well known by the group members
Javascript for Frontend, incl. JQuery library	Used to create/update elements and directly interact with the DOM.

Bootstrap 4, CSS	Easy to use and gives an aesthetically pleasing UI
HTML	Majority of webpages are based off HTML
Choice of Platform	
Google Chrome	Most widely used web browser. Group members are also familiar with the provided dev tools.

## Software Architecture Diagram:



## Part 2: Initial Software Design

### Updated User Stories

Changes: Removed the epic story relating to having an intuitive UI and added an epic story for logging in the system to be able to write reviews and bookmark specific landmarks. Epic Stories 4 and 5 were merged together.

Story Point: 1 unit of time = 1.5 hours

Priority: 1-5 Scale, 1 is most important; 5 is least important

Epic Story 1	Interactive Map
<b>Users:</b> Regular Viewers	
As a user, I would like to be able to click, scroll and zoom on an interactive map, so that I can find landmarks.	

Epic Story 2	Searching for Landmarks
<b>Users:</b> Regular Viewers	
As a user, I would like to be able to search for landmarks through various methods provided by the web application, so that I can find landmarks.	

Epic Story 3	Recommend Landmarks
<b>Users:</b> Regular Viewers	
As a user, I would like to have landmarks recommended to me, so that I can learn about landmarks I've never heard of before.	

Epic Story 4	Displaying information about landmarks
<b>Users:</b> Regular Viewers	
As a user, I would like to be able to see additional information, related news and events about a landmark after selecting it, so that I can learn more about the landmark.	

Epic Story 5	Login to review and bookmark landmarks
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<b>Users:</b> Logged in user
As a logged in user, I would like to be able to bookmark landmarks and write comments/reviews on landmarks.

US 1.1	Clicking on a landmark in the map
<b>ES1</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to click on landmarks in the map, so that I get additional information about the landmark.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- There are pins, indicating landmarks on the map</li> <li>- When a pin is clicked a pop-up window will appear</li> <li>- Clicking on the name of the landmark within the pop-up window directs the user into a new page, that contains all the information of the landmark</li> </ul>	
Story Points: 3	
Priority: 1	

US 1.2	Moving around the map
<b>ES1</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to move the map around, such that the map shows different places, so that I can find landmarks.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- I can smoothly move around the map by clicking and dragging.</li> <li>- When moving the map around, a new area should be shown</li> </ul>	
Story Points: 1	
Priority: 3	

US 1.3	Zooming on the map
<b>ES1</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to zoom in or out on the map, so that I can more easily navigate to a landmark on the map.	
Acceptance Criteria:	

- I can either use my mouse's scroll wheel or a button on the UI to zoom in and out of the map
Story Points: 1
Priority: 3

US 2.1	Searching for landmarks by the search bar
<b>ES2</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to type the name of a landmark onto a search bar, and click a search button, so that I can search for a landmark.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- Search for a landmarks using using keywords</li> <li>- Search for a landmark by providing an exact name</li> </ul>	
Story Points: 2	
Priority: 1	

US 2.2	Searching for landmarks by the map
<b>ES2</b>	<b>Users:</b> Regular Viewers
As a user, I would like to have the ability to scan an area for landmarks, so that I can search an area for landmarks.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- When Clicking the “Search this area” button, landmarks are highlighted on the map by having a pin on them</li> <li>- The sidebar should be updated to the landmarks of the scanned area</li> </ul>	
Story Points: 3	
Priority: 1	

US 2.3	Searching for landmarks by the sidebar
<b>ES2</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to click on a landmark from the sidebar, so that I can search for a landmark.	

Acceptance Criteria: <ul style="list-style-type: none"> <li>- The maps centres on the landmark clicked on</li> <li>- A pop-up box of the selected landmark with photo and title appears</li> <li>- Nearby landmarks appears as pins on the map</li> </ul>
Story Points: 3
Priority: 1

US 2.4	Moving to the searched location
<b>ES2</b>	<b>Users:</b> Regular Viewers
As a user, I would like it if when I search for a landmark, the map would change and be centered on the landmark.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- If I click on a landmark in the sidebar or search on it, the map will move so that the landmark that I searched for/selected is in the centre of the screen</li> <li>- If I use the search bar, the map will move so</li> </ul>	
Story Points: 2	
Priority: 2	

US 2.5	Pins on map
<b>ES2</b>	<b>Users:</b> Regular Viewers
As a user, I would like that there are pins on the map to highlight landmarks, so that I can more easily discover landmarks on the map.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- There should be pins on the map to highlight landmarks based on the search results</li> </ul>	
Story Points: 1	
Priority: 2	

US 3.1	Take me somewhere random
<b>ES3</b>	<b>Users:</b> Regular Viewers
As a user, I would like the option of letting the website randomly select a landmark for me, so that I can explore new landmarks.	

Acceptance Criteria: 2
<ul style="list-style-type: none"> <li>- When the user presses the “take me somewhere” button, they are sent to a random landmark</li> </ul>
Story Points: 1
Priority: 3

US 3.2	Nearby Recommendations
<b>ES3</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be recommended landmarks by the website, based on my current location in the map, so that I can select nearby landmarks more easily.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- When user presses a “scan this area” button, the nearest landmarks on the map should be highlighted by pins on the map</li> <li>- The sidebar should also be updated to reflect the new location</li> </ul>	
Story Points: 2	
Priority: 3	

US 4.1	Landmark details
<b>ES4</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be presented with details such as name, location and origin about the landmark, so that I know more information about it.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- The name, location, and basic information should be presented on the landmark’s information page</li> </ul>	
Story Points: 1	
Priority: 1	

US 4.2	Image of Landmark
<b>ES4</b>	<b>Users:</b> Regular Viewers
As a user, I would like the website to display an image of the landmark, so that I know what the landmark looks like.	



Acceptance Criteria: <ul style="list-style-type: none"> <li>- An image of the landmark should be presented on the landmark's information page</li> <li>- If no information is available, this should be indicated to inform the user</li> </ul>
Story Points:1
Priority: 1

US 4.3	Landmark information
<b>ES4</b>	<b>Users:</b> Regular Viewers
As a user, I would like paragraphs of text containing information about the landmark, so that I can learn more about it.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- Information obtained through an online information API should be gathered and presented in the landmark's information page</li> <li>- If no information is available, this should be indicated to inform the user</li> </ul>	
Story Points: 1	
Priority: 1	

US 4.4	Return to searching
<b>ES4</b>	<b>Users:</b> Regular Viewers
As a user, I would like when I am at a landmark's information page, to be able to go back to the searching/maps page, so that I can search for more landmarks.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- There should be a button for the user to return to searching on the landmark information page</li> <li>- When the button is clicked, the website should redirect the user back to the searching page</li> </ul>	
Story Points: 1	
Priority: 2	

US 4.5	Display Reviews
<b>ES4</b>	<b>Users:</b> Regular Viewers

As a user, I would like to read reviews of a landmark, so that I can decide if it is worth visiting.
Acceptance Criteria: <ul style="list-style-type: none"> <li>- There should be a button for the user to return to searching on the landmark information page</li> <li>- When the button is clicked, the website should redirect the user back to the searching page</li> </ul>
Story Points: 1
Priority: 2

US 4.6	Upcoming Events at Landmark
<b>ES4</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to see upcoming events held at a landmark, so that I know what's ongoing at the place.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- If there are upcoming events located at the landmark, the information page should display it.</li> <li>- If there are no upcoming events, it should display a message which indicates that there is no upcoming events at the location</li> </ul>	
Story Points: 2	
Priority: 3	

US 4.7	Past News at Landmark
<b>ES4</b>	<b>Users:</b> Regular Viewers
As a user, I would like to see past headlines of news articles associated with the landmark, so that I know what past events occurred there.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- If there is news articles associated with the landmark, then the headlines of the articles should appear on the landmark's information page</li> <li>- If there is no news articles found, then nothing should be displayed</li> </ul>	
Story Points: 2	
Priority: 3	

US 4.8	Link to article
<b>ES4</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to click on a news headline and go to the respective news article, so that if I am interested I can easily find out more.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- If there are news articles related to the landmark, the headlines displayed should be links to the original news article</li> </ul>	
Story Points: 1	
Priority: 3	

US 5.1	Sign up
<b>ES5</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to sign up and create an account for the website, so that I can access more features on the website.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- Users can fill up a form to register for an account, providing name and email address, username and password.</li> <li>- If the provided user email address has already been used for an account, the no new account is created.</li> <li>- If the provided username has already been used, no new account is created.</li> </ul>	
Story Points: 2	
Priority: 4	

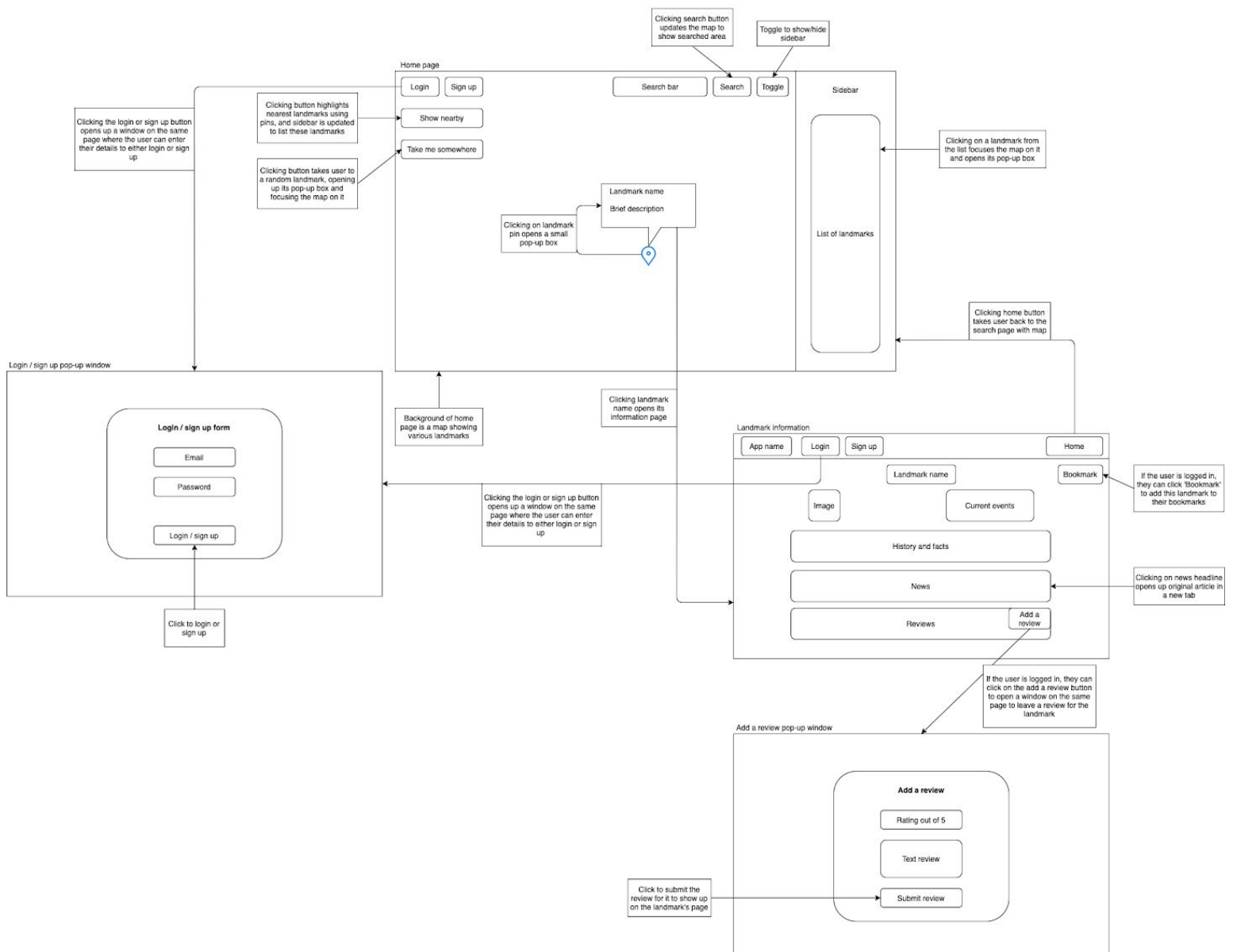
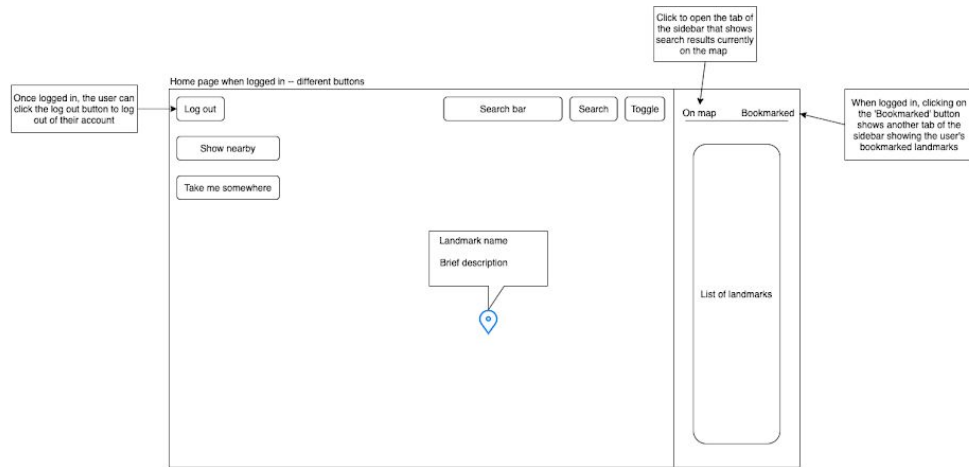
US 5.2	Login
<b>ES5</b>	<b>Users:</b> Regular Viewers
As a user, I would like to be able to log into an existing account so that I can access more features on the website.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- Users can go to a login interface and enter their username and password</li> <li>- If the provided username and password matches an existing account, the user is then logged into the account</li> <li>- If the provided information is not correct, the user prompted that the details are not</li> </ul>	

correct and the user is not logged in
Story Points: 1
Priority: 4

US 5.3	Bookmark landmarks
<b>ES5</b>	<b>Users:</b> Logged in user
As a logged in user, I would like to be able to bookmark landmarks, so that I can easily access those landmarks in the future	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- Users are able to bookmark landmarks when logged into their account</li> <li>- Bookmarked landmarks will appear in the sidebar where the user can access that landmark.</li> </ul>	
Story Points: 2	
Priority: 4	

US 5.4	Write reviews
<b>ES5</b>	<b>Users:</b> Logged in user
As a logged in user, I would like to be able to write reviews of a landmark, so that I can share my opinions of a landmark to other users.	
Acceptance Criteria: <ul style="list-style-type: none"> <li>- Users can rate a landmark and post a review of it.</li> <li>- A user's posted reviews can be seen on the page of the landmark</li> </ul>	
Story Points: 2	
Priority: 4	

# Updated Lofi



# Sequence Diagrams

## Use Case 1

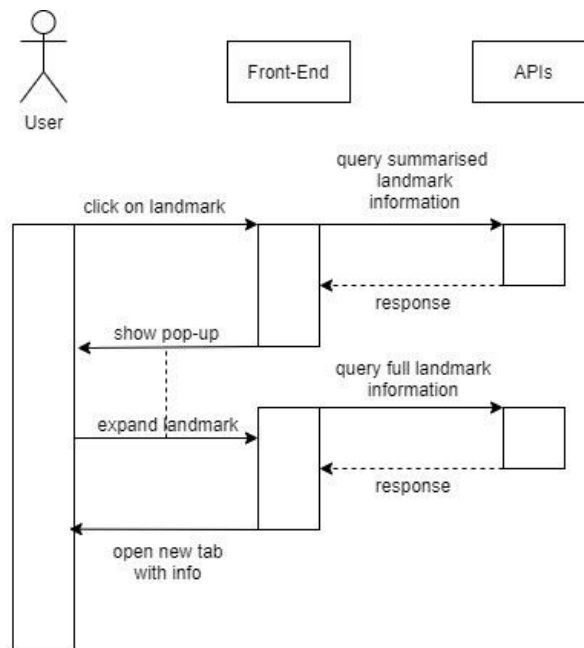
### Interactive Map

The user first clicks on a pin on the landmark

Which shows a popup with the summarised information of the landmark

Then we click in a link to show the full information

Which is opened in a new tab



## Use Case 2

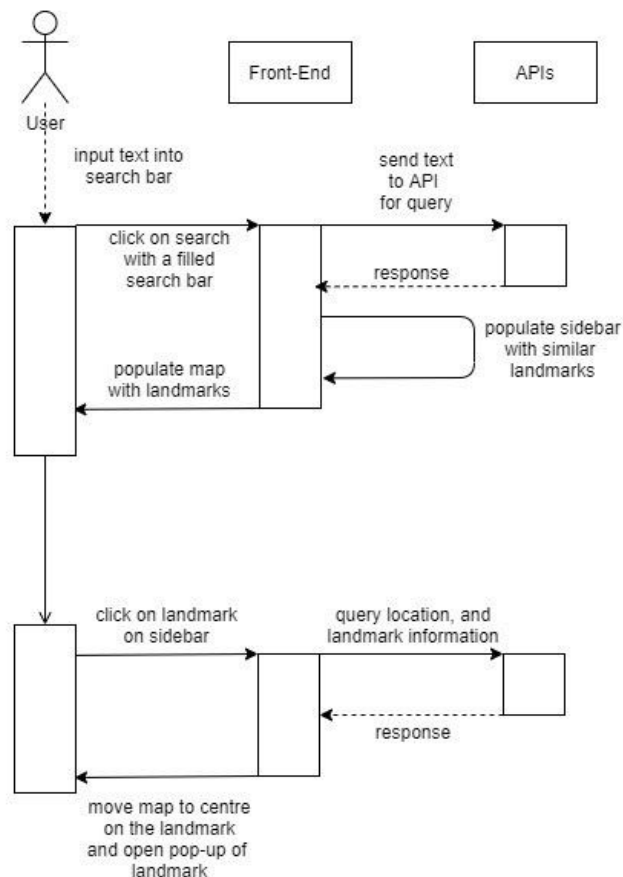
### Searching for Landmarks

The user clicks on the search button, after filling the search bar .

The program sends the text to be reverse-searched by the API.

The response by the API is then sent to the program, which interprets it to fill the sidebar and creates pins on the landmarks on the map.

When a landmark is clicked on the sidebar, the map centres on the landmark, and a popup is shown on the map



### Use Case 3

#### Recommended Landmarks

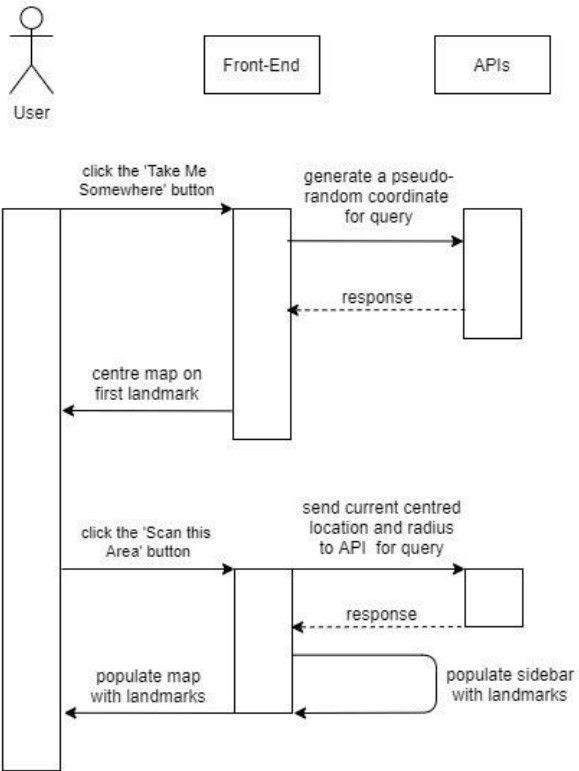
The user clicks on the 'Take Me Somewhere' button

The front-end generates a coordinates randomly using the current coordinates and sends it to the API to be searched.

The API then returns the list of landmarks, and the first landmark returned is then focused on the map.

When the user clicks the 'Scan this Area' button, it will send the current location and a fixed radius in the code to the API to search for landmarks

The API then returns any landmarks to the front-end, where they will be filled onto the map and the sidebar



### Use Case 4

#### Display Information

The user clicks on a landmark to retrieve the full information page

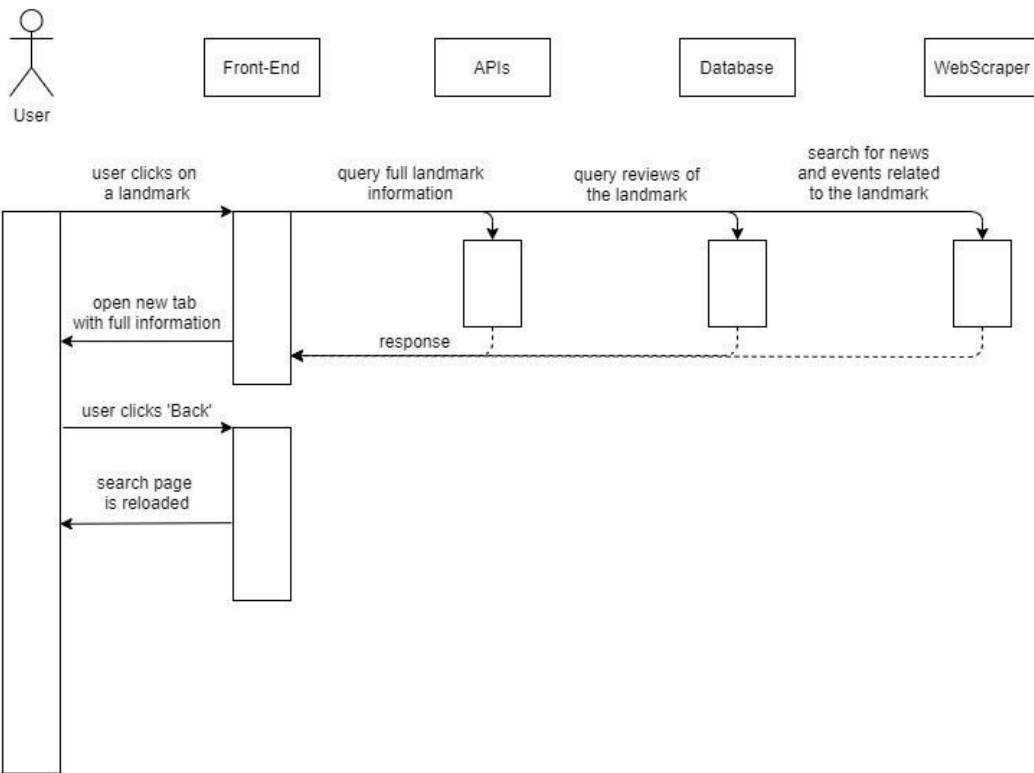
A query is then sent to the API, the web scraper and the database

API returns the image, details and a paragraph of text to be displayed on the information page. If no information or image is available, this is displayed along with the details.

The web scraper searches for any events and news related to the landmark, and returns them if they exist. If no information exists, that is displayed.

The database gathers all the reviews of the landmark, and then displays the reviews in the information page, along with the average review. If no reviews exist, that is displayed.

The user clicks on the 'Back' button, which causes the original search page and map to be reloaded



## Use Case 5

### Login, Review and Bookmark

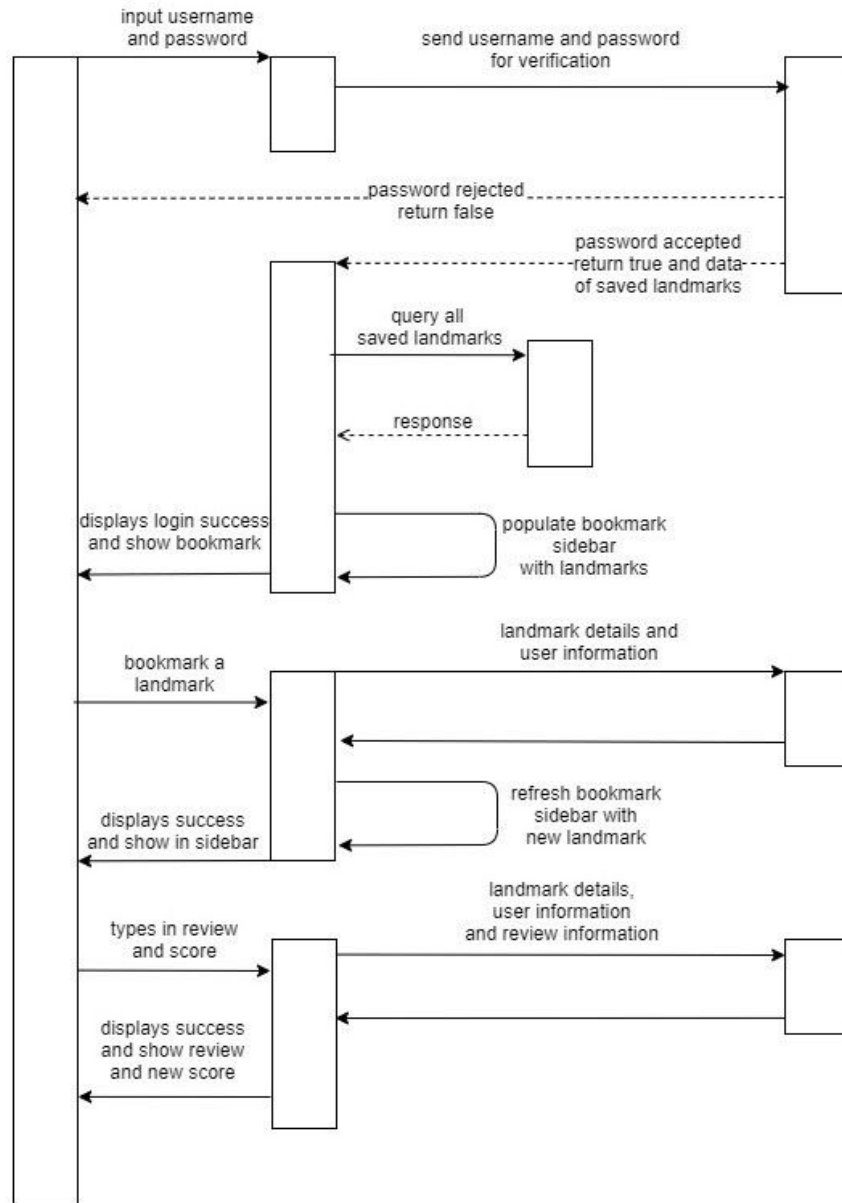


The user enters their credentials and attempt to login. These credentials are sent to the database to be verified.

If the credentials are false, a false response is sent to the front-end which displays this information

If the credentials are true, the database sends a true response, and the set of saved landmarks by the user in question.

The front-end parses this information and sends a query to the API to obtain information to fill the bookmark sidebar, which is then shown on the sidebar



When the user bookmarks a landmark, the data of the landmark is sent to the database, with the user's information, to be stored in the database of the user.

The response is then received by the front-end, which refreshes the sidebar to include the new bookmarked landmark.

When a bookmark is removed, the reverse happens.

When the user reviews a landmark, the review information and the user credentials are sent to the database related to the reviewed landmark to be stored.

The response contains a calculated average score with the new review, which is then displayed in full information once requested.