

UNIVERSITY PARTNER



Internet Software Architecture(4CS017)

Project Report

Student Id	: 2330473
Student Name	: Aman Kumar Sah
Group	: <L4CG10>
Lecturer	: Mr. Pardeep Mani Dixit
Submitted on	: <21-05-2023>

Contents

1. PROTOTYPE.....	1
1.2 WEAKNESS:.....	1
2. PROTOTYPE.....	1
2.1 WEAKNESS:	2
3. PROTOTYPE 3	2
4. WEB HOSTING:.....	3
5. SCREENSHOT OF HOSTED APPLICATION SHOWING EVERY STEP IN APP:	3
6. UML DIAGRAM:.....	7
7. LINK TO WEATHER APPLICATION:.....	9
8. REFERENCES	9

Table of Figures

FIGURE 1 : ACTIVITY DIAGRAM.....	7
FIGURE 2 : SEQUENCE DIAGRAM	8
FIGURE 3 : DEPLOYMENT DIAGRAM	9

1. Prototype

In this prototype, we used HTML, CSS and JavaScript to conduct a weather application. This program's objective is to provide users with weather information. To access the necessary data, we integrated the Open Weather API into our application. The process starts with a JavaScript request to the Open Weather API. The API returns weather data in JSON format. JavaScript is used to decode and extract the required information from the JSON input. Temperature, humidity, wind speed, and meteorological variables are all covered. After collecting the necessary meteorological data, we display it in the users web browser. To develop a visually beautiful and user-friendly interface, we arrange the content with HTML and style with CSS. The design improves the presentation of weather information, making it easier for consumers to read and understand.

Within the application, we have also integrated as search bar. Users can use this tool to check up weather information for specific city. When a user types a city name into the search bar and submits the request, the application obtains and displays weather data from the Open Weather API for that city.

1.2 Weakness:

The prototype 1 has a few limitations that can be considered drawbacks. For starters, it lacks the ability to save any returned data, which implies that any data is lost if the software is quit or reloaded. Users who wish to keep their data for future reference or study may find this lack of data persistence inconvenient. Another problem is that the prototype 1 only retrieves data through APIs. While an API connection allows for real-time data updates, it can slow down data loading procedures in the user interface. Every time the software has to show or update data, it must make an API call, which can result in latency and a terrible user experience. Users who demand quick and responsive programs may be irritated by the data loading latency.

2. Prototype

We solved the shortcoming of the previous prototype in this revised prototype by adopting a new way to data storage in a database. Rather than using JavaScript to retrieve data from the API, we have included PHP code to perform this task directly. The PHP code receives data from the API for the current day and the previous seven days when a user searches for a city. This information is saved in the database for future use. Users can obtain and view past weather information by storing the data.

To provide this capacity, the code is written in PHP and includes relevant HTML, CSS and JavaScript. The PHP code is responsible for obtaining data from the API and saving it in the database. HTML, CSS and JavaScript components may have been modified to accommodate the new PHP implement.

2.1 Weakness:

Despite correcting the flaws of prototype 1, the new version has its own set of flaws. The persistent reliance on the API to retrieve data every time the user searches for a city is a serious disadvantage. The application will be unable to retrieve the necessary data to display in the user interface if there is no internet connection. Simply said, if the application is unable to connect to the internet, it will be unable to access the data required to display city information. As a result, there is a lack of functionality and the inability to provide real-time data when the system is offline.

The disadvantage emphasizes the need for a new method to coping with offline conditions. One viable alternative could be to provide a local data storage method, such as caching previously fetched data. By keeping the data locally, the program can display the information even when no internet connection is available. With a caching mechanism in place, the application would only need to retrieve data from the API when there are updates or changes decreasing the programs need on internet access for data presentation.

3. Prototype 3

We built an improved weather application using JavaScript and PHP to address the drawbacks of the previous two prototypes. The application employs both JS and PHP to deliver the optimum functionality and efficiency. When a user searches for weather data for a specific city, the application pulls the data from an API. Unlike previous prototypes, the obtained data is now saved in both a database and the local storage of the user's device. This dual storage method offers several benefits. To begin, when a user requests meteorological data for a previously searched-for city, the program can download the data straight from local storage and the database. This avoids the requirement for an API request, resulting in a quicker response time. The program decreases its reliance on external resources by leveraging locally stored data, enhancing efficiency and user experience.


Furthermore, even in the absence of internet connectivity, the weather application can continue to work correctly for cities that have their data stored locally. This offline capability ensures that users can get weather information for their saved cities even when they are not connected to the internet, increasing the app's utility and convenience. This new prototype improves the weather app experience by combining the strengths of JavaScript and PHP. The combination of local storage and database integration increases performance, allowing for faster data retrieval and ensuring operation even when the internet is turned off.

4. Web Hosting:

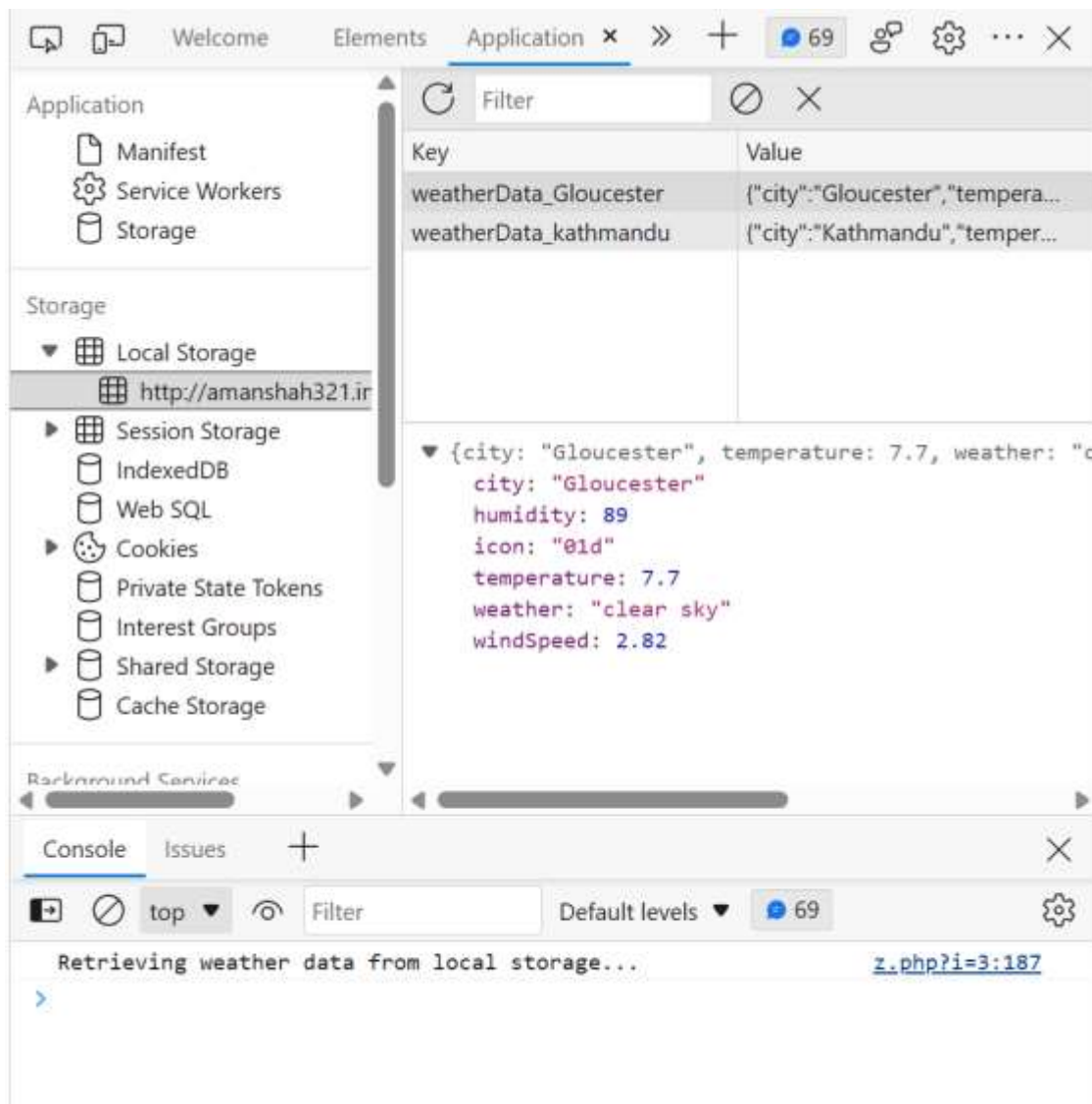
The technique of making a website or web application available to internet users without providing them direct access to the underlying code is known as web hosting. In other words, it allows individuals or organizations to store their websites files and data on a remote server that visitors from all over the world can access. I have chosen Infinity Free as my web hosting provider for our assignment's weather application. Our module recommends infinity free as a free hosting service. Upload the essential files associated with our weather application to the infinity Free server to host our application. Uploading our HTML, CSS , JavaScript and other essential files to the hosting server is normally the first step.

Furthermore, in order to display our web application, we must construct a subdomain, which is a subdomain, which is subset of our main domain name. This subdomain will be used to provide global access to our weather app. Weather application will be accessible to those who search for or enter the URL of our subdomain in their web browser.

5. Screenshot of hosted application showing every step in app:

Date and Time	Temperature	Weather	Icon	Windspeed	Humidity
2023-05-19	7.7 °C	clear sky		2.82km/hr	89%
2023-05-18	9.35 °C	clear sky		5.24km/hr	83%
2023-05-17	13.16 °C	clear sky		5.6km/hr	71%
2023-05-16	16.5 °C	clear sky		5.75km/hr	62%
2023-05-15	14.72 °C	clear sky		4.96km/hr	77%
2023-05-14	9.3 °C	clear sky		3.13km/hr	93%
2023-05-13	6.34 °C	clear sky		2.74km/hr	91%





localhost/phpmyadmin/index.php?route=/sql&db=weatherapp&table=try&pos=0

Server: 127.0.0.1 Database: weatherapp Table: try

Showing rows 0 - 6 (7 total, Query took 0.0006 seconds.)

```
SELECT * FROM `try`
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

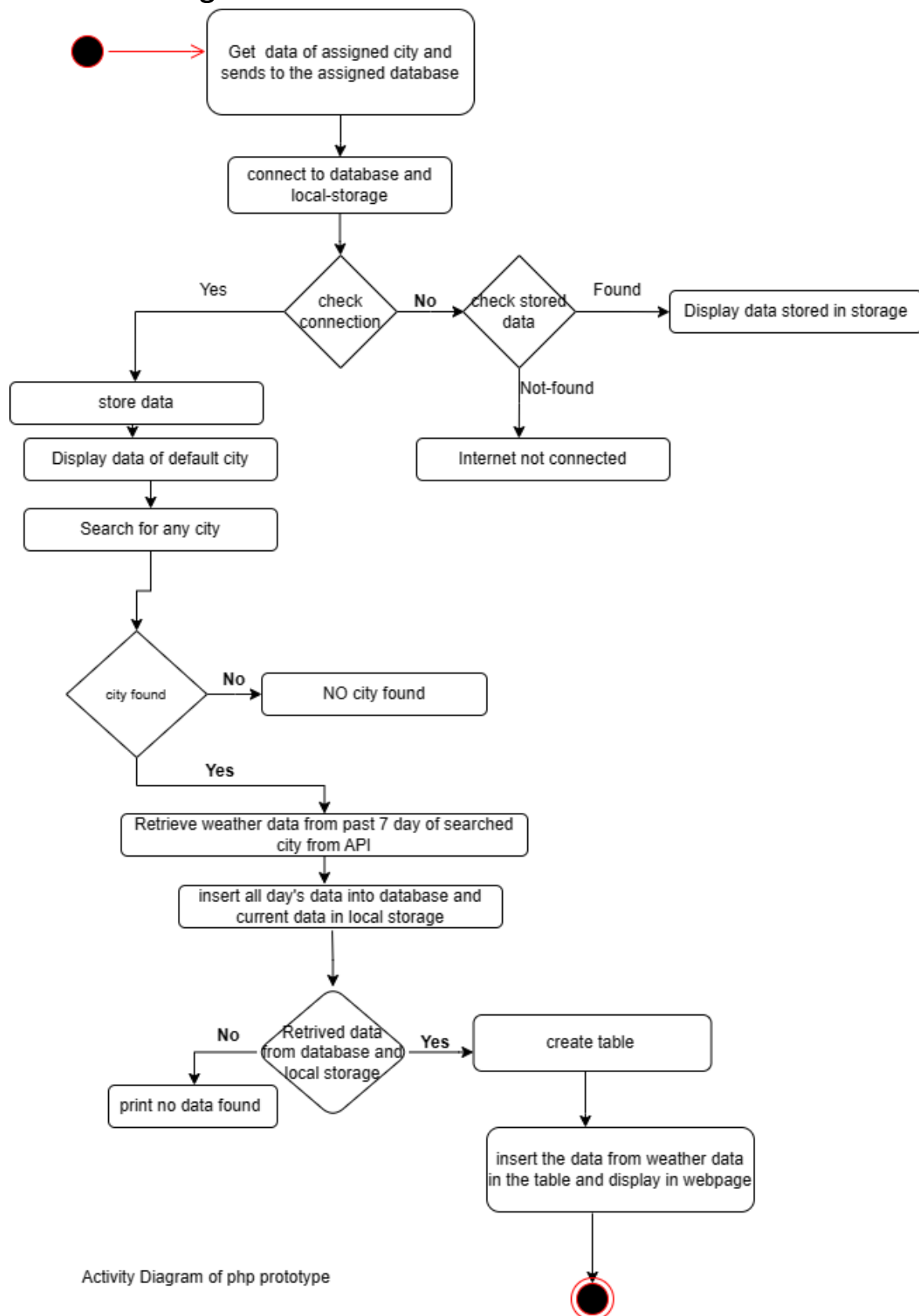
Extra options

					id	date	temperature	weather	icon	windspeed	humidity
<input type="checkbox"/>	Edit	Copy	Delete		1	2023-05-04	16.59	light rain	10d	5.82	73
<input type="checkbox"/>	Edit	Copy	Delete		2	2023-05-03	15.86	light rain	10d	3.7	79
<input type="checkbox"/>	Edit	Copy	Delete		3	2023-05-02	12.52	light rain	10n	2.91	88
<input type="checkbox"/>	Edit	Copy	Delete		4	2023-05-02	9.32	broken clouds	04n	2.64	97
<input type="checkbox"/>	Edit	Copy	Delete		5	2023-05-01	8.9	overcast clouds	04n	2.44	98
<input type="checkbox"/>	Edit	Copy	Delete		6	2023-04-30	10.46	overcast clouds	04d	1.82	97
<input type="checkbox"/>	Edit	Copy	Delete		7	2023-04-29	13.25	light rain	10d	3.79	92

☐ Check all With selected: Edit Copy Delete Export

Console

6. UML Diagram:



Activity Diagram of php prototype

Name: Aman Kumar Sah
Student_ID: 2330473

Figure 1 : Activity Diagram

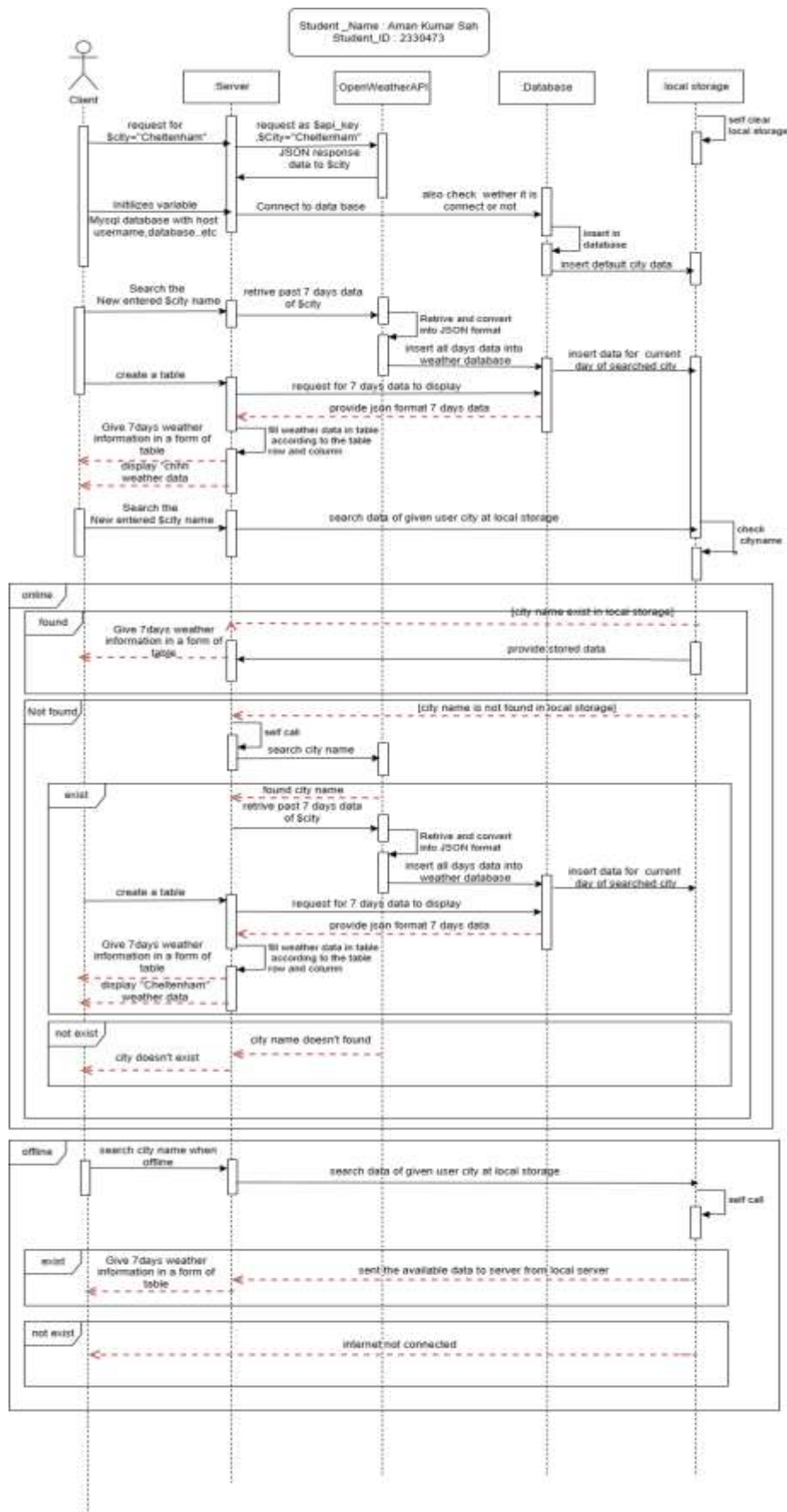
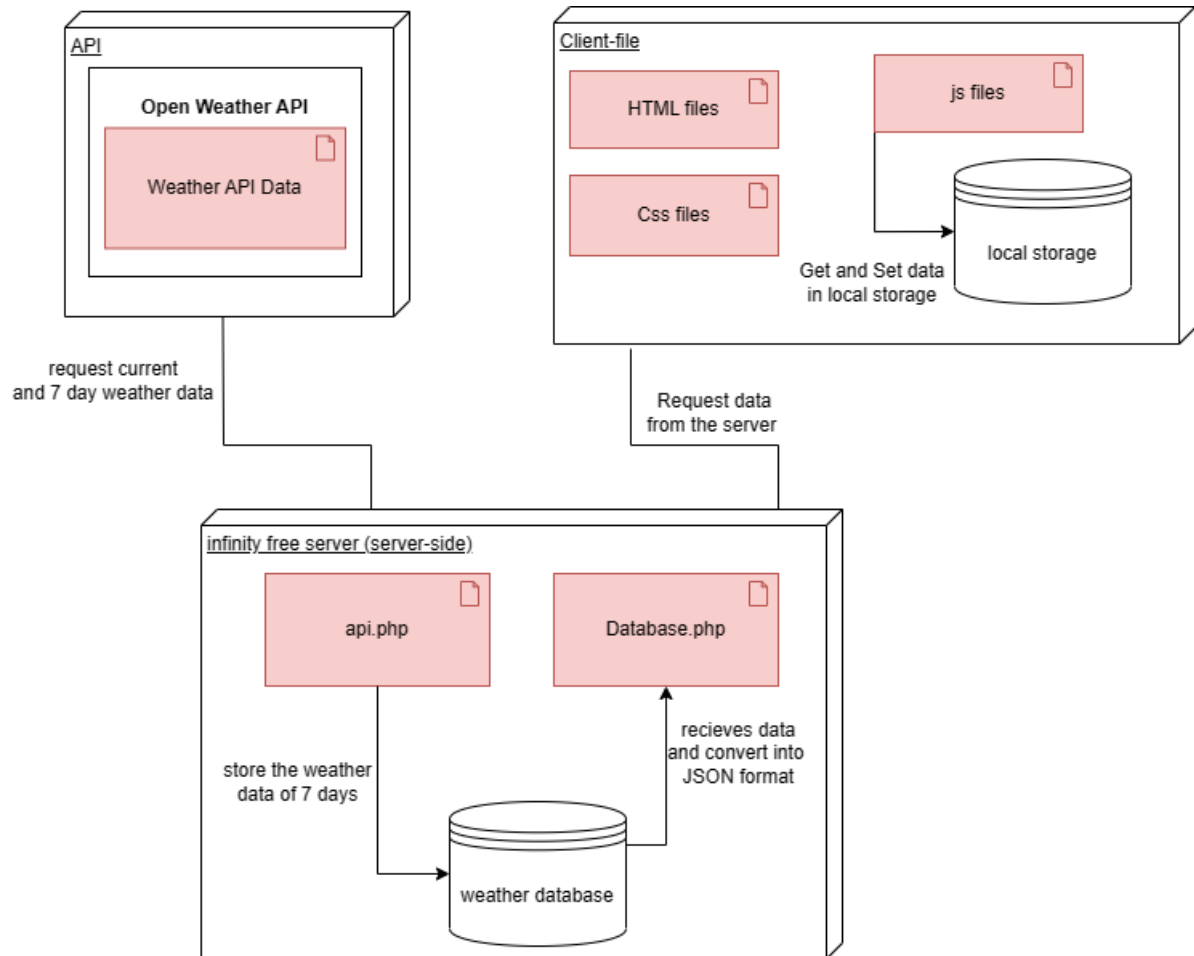


Figure 2 : Sequence Diagram



Deployment Diagram by Aman Kumar Sah (2330473)

Figure 3 : Deployment Diagram

7. Link to weather application:

[Weather app \(infinityfreeapp.com\)](https://infinityfreeapp.com/)

8. References

[Flowchart Maker & Online Diagram Software](#)

[Stack Overflow](#)Free Web Hosting with PHP and MySQL - InfinityFree