Internet Software Architecture (ISA) (4CS017)

Report Writing on Weather Application

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Acknowledgement:

I would want to thank our instructors, Mr. Deepson and lecturer Karan Shrestha, for providing me with the assistance and direction I needed to complete this work. The Weather App Report aims to provide a detailed overview of how to develop and implement a weather application using HTML, CSS, PHP, SQL, and JavaScript. This report discusses operations such as collecting and storing weather data, building the user interface, and interfacing with a backend database. It also involves tasks such as

creating the user interface. The report goes into considerable detail about the technology employed, the obstacles encountered throughout the development stage, and prospective future enhancements.

1.First Prototype:

Despite my best attempts, my weather app is not the best, but I did my best to create it. This app has some limited capabilities. It can collect information from the OpenWeatherMap API. Next, execute the JavaScript code. It pulls reliable meteorological data from the OpenWeatherMap API and displays it on your website. This webpage currently just displays temperature, wind speed, high/low temperature, county name, and weather category. You must click the icon to get the most recent weather report, as this website does not update in real time. It is now limited to one county.

I added some background photos and changed the CSS to no repeat. I also included some comments to help people understand my code. I tried using functions in my project because they reduced the number of code lines and made the code cleaner. I made a different div and added some classes to it. The "Get Weather" button runs a procedure from my script file. There is a function within a function.The function "getResults()" accepts a county name and provides data for the OpenWeatherMap API. The data is then supplied to a new function called "displayResults()" as an argument.

2.Second prototype:

This prototype application was built on the foundations of HTML, CSS, JavaScript, and PHP. The application retrieves current worldwide weather data from OpenWeatherMap, a free resource, and stores it in a MySQL database called "Weather app." This API retrieves a wide range of data components, including description, temperature, wind speed, direction, and date. The application initially displays temperature data for South Lanarkshire. PHP is used to retrieve and gather data from the OpenWeatherMap API, which is then saved to the selected database. In addition, PHP is used to retrieve data from the database, which is then passed on to JavaScript for frontend presentation of historical weather data.

3. Third prototype:

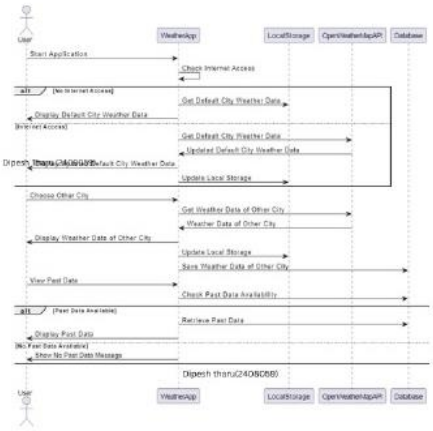
. We must use "local storage" for our final work and to submit the ISA project. This implies that the necessary meteorological data for the website is immediately stored on the user's device. This gives some advantages because it reduces the loading and response times of the website. Furthermore, users can monitor the weather even when they are not online.

The weather information is stored directly on your smartphone, so you may still access it even if your internet connection is lost. We accomplish this with the aid of a person referred to as a "Service Worker." This Service Worker is a unique section of the code that facilitates communication between the web browser and web server. We need a location to host our

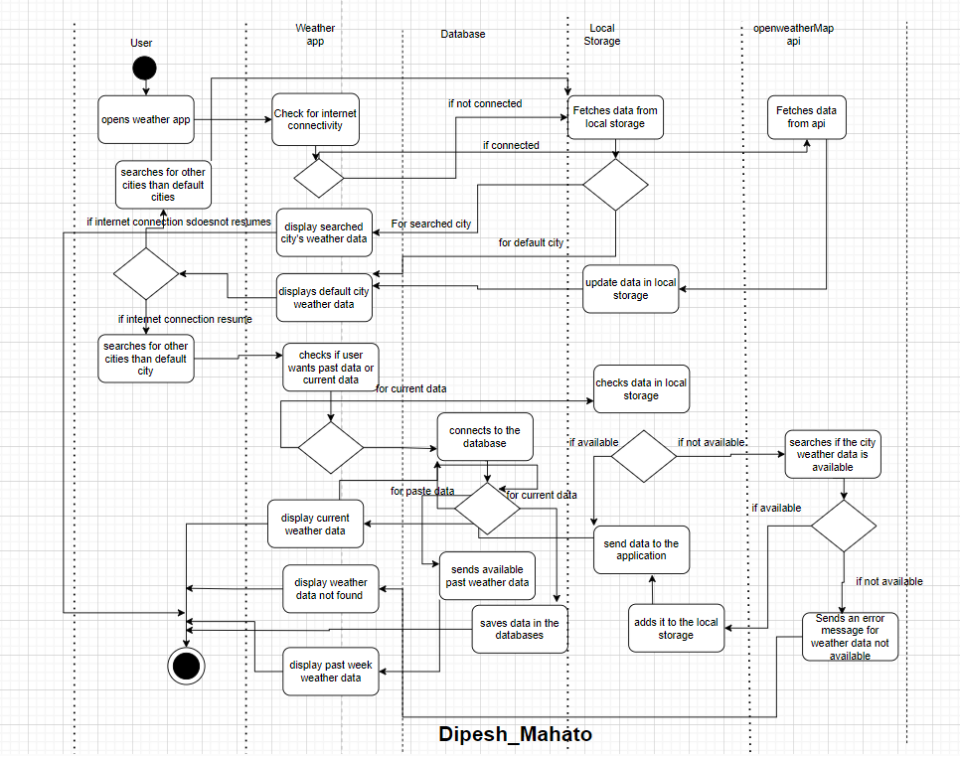
project online once we've completed this task. But frequently, hosting websites can be expensive. So, we utilize a program called "Infinity Free Tools" to build a website where we can host our project. It's similar to free-of-charge setting up a little web space for our project

4.UML Diagram:

4.1Activity diagram:



4.2 Sequence diagram:



Screenshot of activity diagram

Sequence diagram

4.3Deployment diagram:

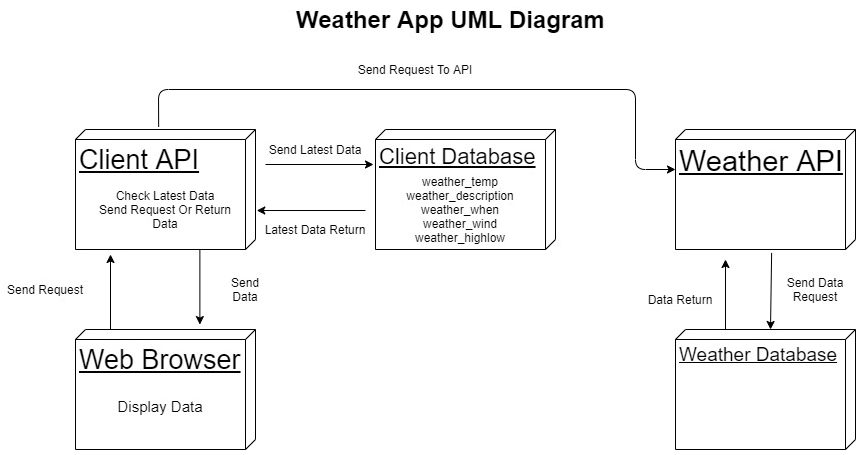


Figure 11:Deployment diagram

5. Web Hosting:

Web hosting plays a critical role in ensuring that websites are accessible online. It provides a vital service that allows individuals and businesses to publish their websites on the internet. Essentially, web hosting involves storing website components such as files and databases on specialized computers called servers, which are connected to the internet.

When we want to visit a website, our web browsers initiate a communication with the hosting server. They ask, "Can I access this website?" The hosting server then sends all the necessary files and data, which our browser puts together to display the website on our screens

6.000webhosting:

There's an economical web hosting option known as 000webhost, enabling users to get their websites online. One notable aspect is its use of shared hosting, where numerous websites share a single server to reduce expenses. However, being a free service, it may have limitations on website capabilities and speed. It might lack the advanced features and support provided by paid alternatives, which usually offer more resources and assistance in case of problems. Therefore, when contemplating 000webhost, it's essential to evaluate your website's needs and see if this service aligns with them.

7.Link of weather app:

dipeshtharu2408059.000webhostapp.com

8.Conclusion:

By completing this project, I learnt about different programming languages such as HTML, CSS, PHP, JavaScript. I also learnt to handle different error handling.