Model Program Book

SEMESTER INTERNSHIP

Designed & Developed by

ANDHRA PRADESH

STATE COUNCIL OF HIGHER EDUCATION

SEMISTER INTERNSHIP PROJECT REPORT ON

WEATHER.IO-WEATHER APP

Submitted in partial fulfilment of the requirements for the award of the degree

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

Submitted by

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Accredited by NAAC, Affiliated to JNTUK, Kakinada, Chaitanya Knowledge City, Velugubanda, Rajamahendravaram – 533 296, Andhra Pradesh, India.

WEATHER.IO – WEATHER APP

A PROJECT REPORT

Submitted by

DEVIREDDY THARUN SAI

ANGOTHI SARAN

KODAVALI KISHOREKUMAR

KORAPATI RAMPRASAD

In Partial fulfillment for the award of

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Department of Computer Science And Engineering

GIET ENGINEERING COLLEGE, RAJAHMUNDRY

MAY, 2023

GIET ENGINEERING COLLEGE, RAJAHMUNDRY

CERTIFICATE

This is to Certify that project of 6th Semester entitled "**WEATHER.IO-WEATHER APP"** has been successfully completed by

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Place : RAJAHMUNDRY

Date : 28-07-2023

ABSTRACT

Weather report application is a web based application through which you will able to get all the reports related to weather forecasting of any locations. Its geographical locator which will be received through your browser setting and server configuration will automatically identify the location and able to present its weather details such as temperature, direction of wind, rains, humidity etc. To change the location you will just have to select the options provided below to get its details. Its new avatars and feed burner will also allow its users to get the weather reports directly to their mail, when they were not able to access this particular domain or even when the server is down. Its weather watch gadgets in animated form will able to notify about weather for particular date and time also. It will also able to focus on critical weather condition for a particular gadgets through this gadgets. So with one weather solutions, its users can get weather reports by getting information directly from satellite and radar via proper communication medium using java servlet coding. Its calculations and details are so accurate, that you can even check and match it from news channel. Its user's friendly tools are so simple to use, that even a child can handle it and get information on particular geographical area.

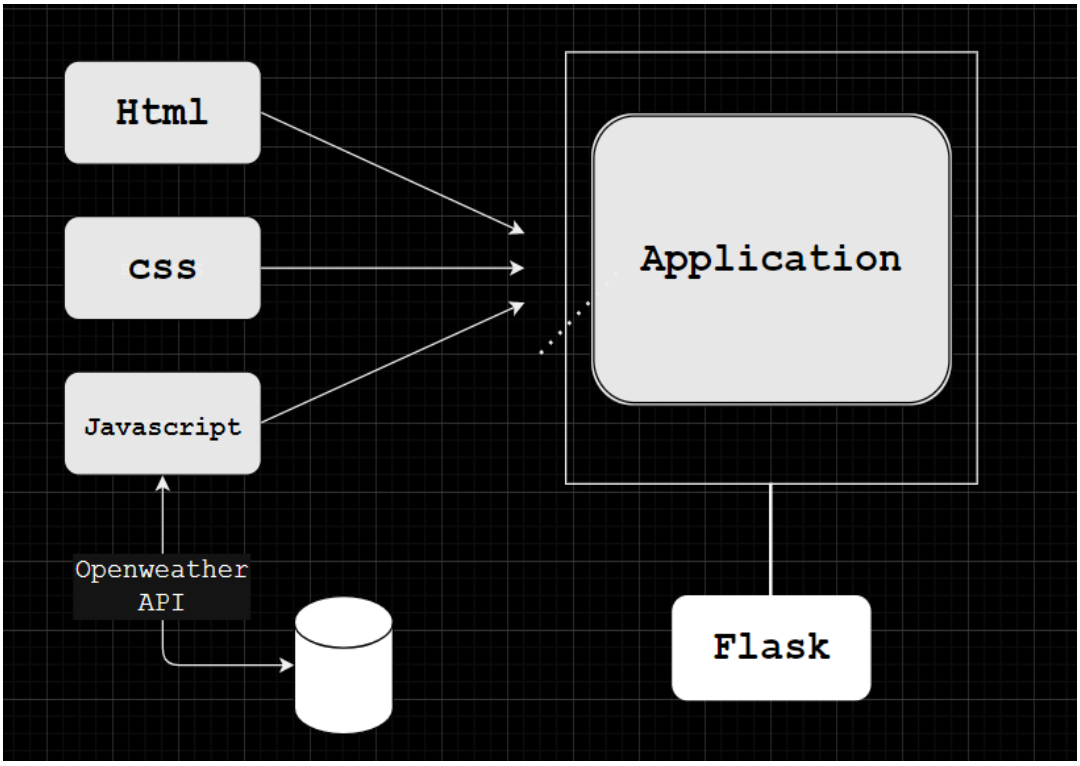
CONTENTS

1. WEATHER.IO-WEATHER APP.

1.1 Project Description

The Weather.io is a web application that provides real-time weather information for a specified location. It utilizes the OpenWeatherMap API to fetch weather data and displays it in a user-friendly interface. Users can search for a location by city name and receive detailed weather information, including temperature, humidity, wind speed, and weather conditions.

Technical Architecture:



2. PRE-REQUISITES.

To complete this project, you will need:

- A code editor (such as Visual Studio Code, Sublime Text, or Atom)
- A web browser
- An internet connection

- HTML, CSS, and JavaScript knowledge
- OpenWeatherMap API key (sign up at https://openweathermap.org/ to obtain one)

3. PROJECT OBJECTIVES.

By the end of this project, you will:

- Create a user interface using HTML and CSS to display weather information.
- Utilize JavaScript to interact with the OpenWeatherMap API and fetch weather data.
- Dynamically update the UI with the fetched weather data.
- Allow users to search for weather information by city name or zip code

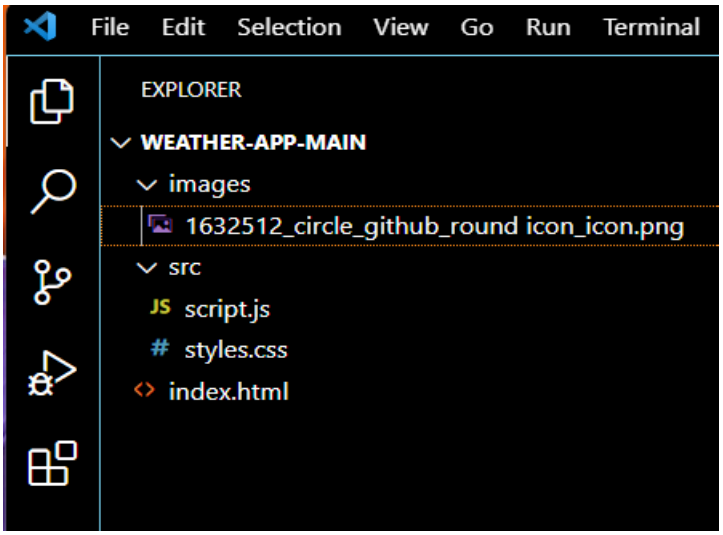
4. PROJECT FLOW.

To accomplish the objectives, we will complete the following activities:

- Set up the project structure
- Design and implement the user interface
- Connect to the OpenWeatherMap API
- Fetch weather data based on user input
- Update the UI with the fetched weather data

5. PROJECT STRUCTURE.

The project structure will include the following files:



5.1 Set Up The Project Structure.

Create a new project folder for the Weather App.
Inside the project folder, create the following files/folders:

index.html

style.css

script.js

Next, put css and js files in **static** folder while index.html file in **templates** folder as you have to render it through flask.

Create app.py and write the python code for running your application.

5.2 Design And Implement The User Interface.

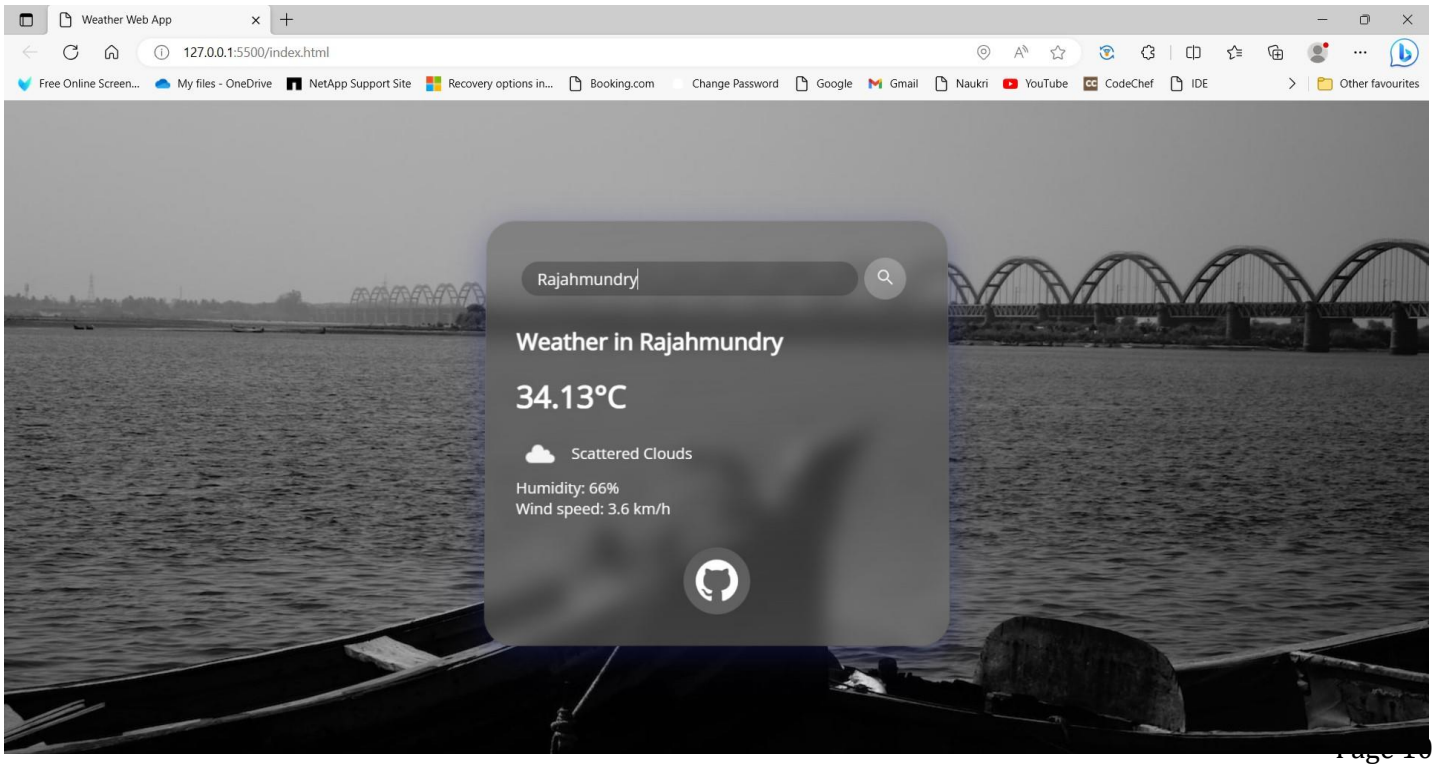
Open index.html in your code editor.

Set up the basic HTML structure.

Design the layout and structure of the user interface using HTML elements and CSS classes.

Apply styles to the UI elements using CSS in style.css.

Link style.css to index.html.



5.3 Connect To The OpenWeatherMap API.

In script.js, define a constant variable to store your OpenWeatherMap API key.

Create a function to handle API calls and fetch weather data from the OpenWeatherMap API.

Use the fetch() function or an AJAX library to make a GET request to the OpenWeatherMap API, passing the necessary parameters (e.g. city name).

Handle the API response and extract the relevant weather data.

src > JS script.js > weather

```
/* Fetching Data from OpenWeatherMap API */
let weather = {
  apiKey: "aba6ff9d6de967d5eac6fd79114693cc",
  fetchWeather: function (city) {
    fetch(
      "https://api.openweathermap.org/data/2.5/weather?q=" +
      city +
      "&units=metric&appid=" +
      this.apiKey
    )
      .then((response) => {
        if (!response.ok) {
          alert("No weather found.");
          throw new Error("No weather found.");
        }
        return response.json();
      })
      .then((data) => this.displayWeather(data));
  },
```

```
displayWeather: function (data) {
  const { name } = data;
  const { icon, description } = data.weather[0];
  const { temp, humidity } = data.main;
  const { speed } = data.wind;
  document.querySelector(".city").innerText = "Weather in " + name;
  document.querySelector(".icon").src =
    "https://openweathermap.org/img/wn/" + icon + ".png";
  document.querySelector(".description").innerText = description;
  document.querySelector(".temp").innerText = temp + "°C";
  document.querySelector(".humidity").innerText =
    "Humidity: " + humidity + "%";
  document.querySelector(".wind").innerText =
    "Wind speed: " + speed + " km/h";
  document.querySelector(".weather").classList.remove("loading");
  document.body.style.backgroundImage =
    "url('https://source.unsplash.com/1600x900/?" + name + "')";
},
```

5.4 Fetch Weather Data Based On User Input.

Add an input field and a button to the UI to allow users to enter a city name or zip code.

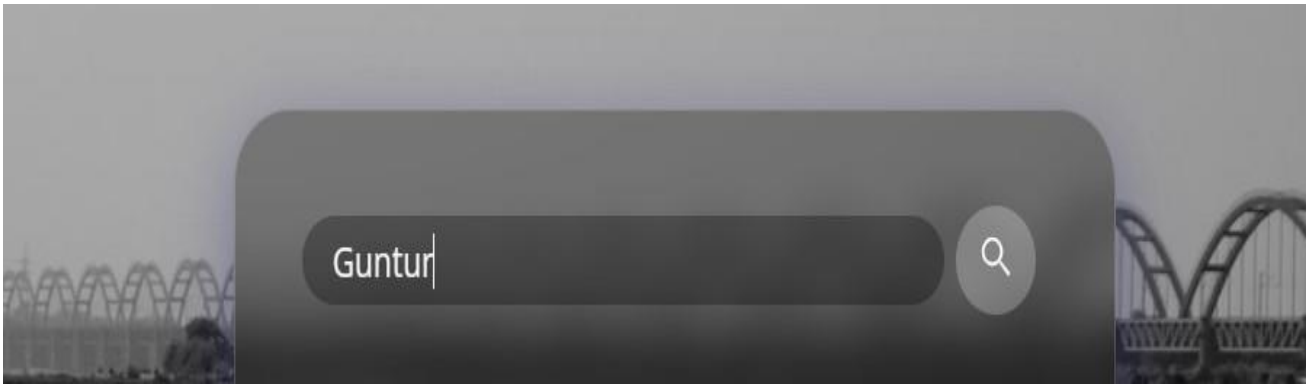
Add an event listener to the button to trigger the weather data fetch function when clicked.

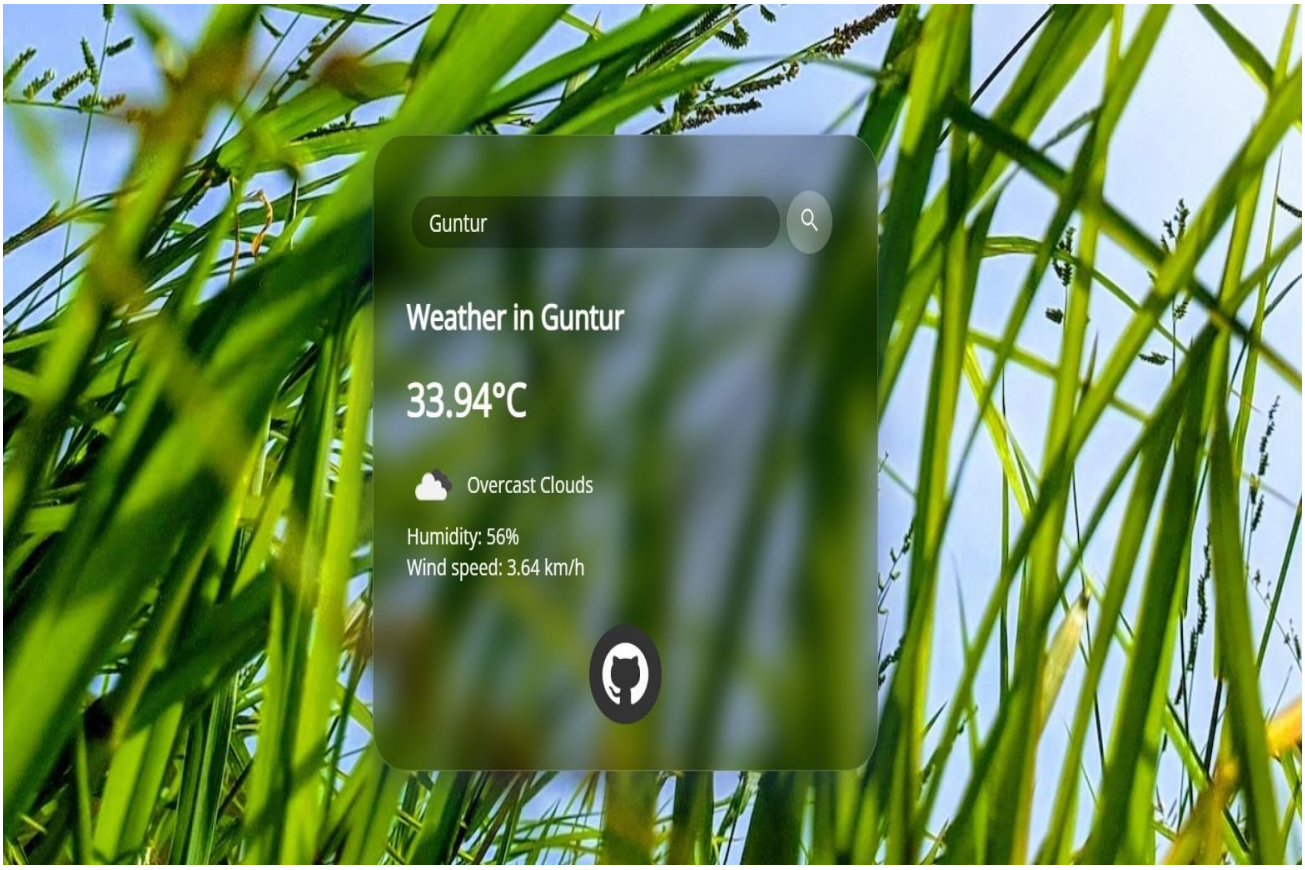
Retrieve the user input from the input field.

```
search: function () {
  this.fetchWeather(document.querySelector(".search-bar").value);
},
```

5.5 Update The UI With The Fetched Weather Data.

Create functions to update the UI with the fetched weather data.
Select the necessary UI elements using JavaScript DOM manipulation methods.Modify the UI elements' content or styles to display the weather information dynamically.



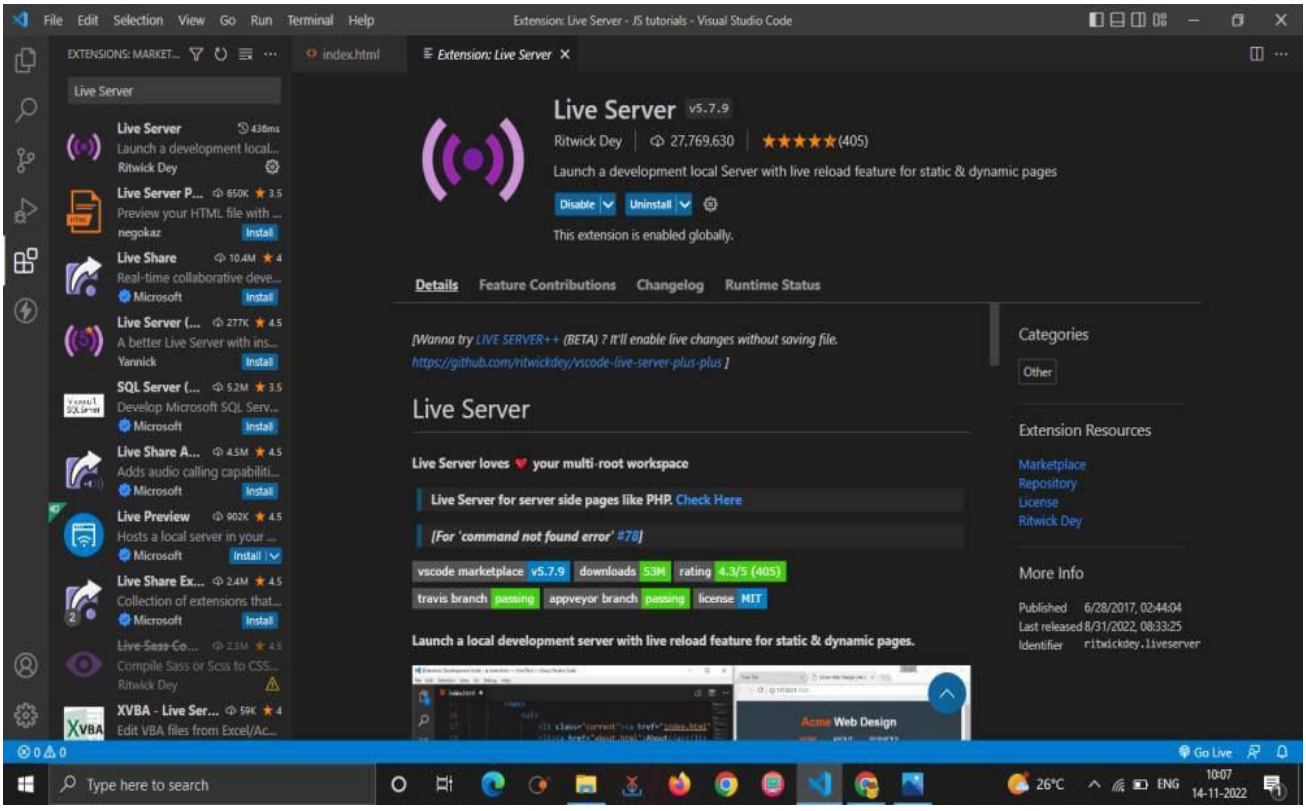


As you can see there is searchbar,which is a button when clicked tells you the weather of your current location this uses geolocation property in js.

6. CONCLUSION.

LIVE SERVER :

Live Server, a Visual Studio (VS) Code extension, enables developers to preview their work in real time. The extension eliminates the tediousness of manually refreshing the browser each time you make any changes, which can add up in larger projects.



The Weather App is a web application that provides real-time weather information to users. By integrating the OpenWeatherMap API and implementing an intuitive user interface, users can easily retrieve weather data for a specific location. The project's modular structure allows for easy maintenance and further enhancements, such as adding additional features or optimizing the UI.