WEATHER APP

A MINI-PROJECT REPORT

Submitted by

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OCTOBER 2022

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR – 603 203

BONAFIDE CERTIFICATE

Certified that this B.Tech mini-project report titled "Real Estate**"** is the bonafide work of **PRATHMESH JOSHI and ROHIT GOYAL** who carried out the project work under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion for this or any other candidate.

Dr. K. DHANASEKARAN
SUPERVISOR
Assistant Professor
Department of DSBS

Dr. M. Lakshmi
PROFESSOR & HOD
Department of DSBS

Signature of Internal Examiner

Signature of External Examiner

ABSTRACT

Weather is the state of the atmosphere at a given place and time in regards to heat, cloudiness, dryness, sunshine, wind, and rain. Of all the geophysical phenomena weather is the most significant one that influences us. Weather can vary greatly and largely depends on climate, seasons and various other factors. The chief goal of this work is to get the weather forecast of any city throughout the world through an application. This paper aims at creating a web application using Javascript framework VanillaJS.

Weather is something that never remains constant. Getting to know precise weather conditions helps people to plan out their daily schedule. With weather forecasting technology reaching to the skies, dissemination of the forecast has taken diverse routes.

Weather app development is one such happy fallout. Weather apps enable users to get instant alerts regarding weather conditions. Weather apps are the simplest method to know about the updates of the upcoming weather.

Our Weather Forecast App enables user to add numerous locations to the list to verify the weather data accordingly. The user will be able to view the updated weather data every hour for any given location. Some supplementary information is also presented within the app like timings of sunrise and sunset of that specific day, prevailing humidity at the particular location and rain forecast.

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CHAPTER 1

INTRODUCTION

Weather is something that never remains constant. Getting to know precise weather conditions helps people to plan out their daily schedule. With weather forecasting technology reaching to the skies, dissemination of the forecast to has taken diverse routes. Weather app development is one such happy fallout. Weather apps enable users to get instant alerts regarding weather conditions. Weather apps are the simplest method to know about the updates of the upcoming weather.

Our Weather Forecast App Development enables the user to add numerous locations to the list to verify the weather data accordingly. The user will be able to view the updated weather data every hour for any given location. Some supplementary information is also presented within the app like timings of sunrise and sunset of that specific day, prevailing humidity at the particular location and rain forecast.

Chapter 2

LITERATURE REVIEW

2.1 EXISTING SYSTEM:

The purpose of a weather forecast is to provide as accurate as possible prediction of what the weather will be like in the near future.

They are important to most aspects of day to day life, including aviation, boating, other modes of transportation, farming, tourism, sports, etc. Without accurate weather forecasts people involved in activities like the ones I've listed may end up in dangerous situations they were unprepared for and end up injured or worse. Pilots need to know the weather to plan their flights, sailors need to know what the weather will be like to plan their activities, and farmers need to know what the weather will be like to help them plan watering, fertilizer and pesticide application, and harvest activities, to name a few.

Chapter 3

SYSTEM ANALYSIS

3.1 PROBLEMSTATEMENT:

Users can get too busy at work or at home to check the current weather condition for sever weather. Many of the free weather software programs have too many pop ups or unwanted software tied to them like weather bug. Getting confusing information on weather warnings and watches from inaccurate sources.

PROPOSED SOLUTION:

The purpose of a weather forecast is to provide as accurate as possible prediction of what the weather will be like in the near future.

They are important to most aspects of day to day life, including aviation, boating, other modes of transportation, farming, tourism, sports, etc. Without accurate weather forecasts people involved in activities like the ones I've listed may end up in dangerous situations they were unprepared for and end up injured or worse. Pilots need to know the weather to plan their flights, sailors need to know what the weather will be like to plan their activities, and farmers need to know what the weather will be like to help them plan watering, fertilizer and pesticide application, and harvest activities, to name a few.

3.2 SOFTWARE and HARDWARES

1. **Software Requirements**

   Operating System: Windows/MacOS/Linux
   Tools: Visual Studio Code

2. **Hardware requirements:**

   Processor: Intel i3 or Amd Ryzen 5 and above
   Hard disk: minimum 2 GB space
   RAM: <2GB

Chapter 4

SYSTEM DESIGN AND IMPLEMENTATION

HTML:

The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.[2] A form of HTML, known as HTML5, is used to display video and audio, primarily using the <canvas> element, in collaboration with JavaScript.

REACT:

React is a JavaScript library for building user interfaces.

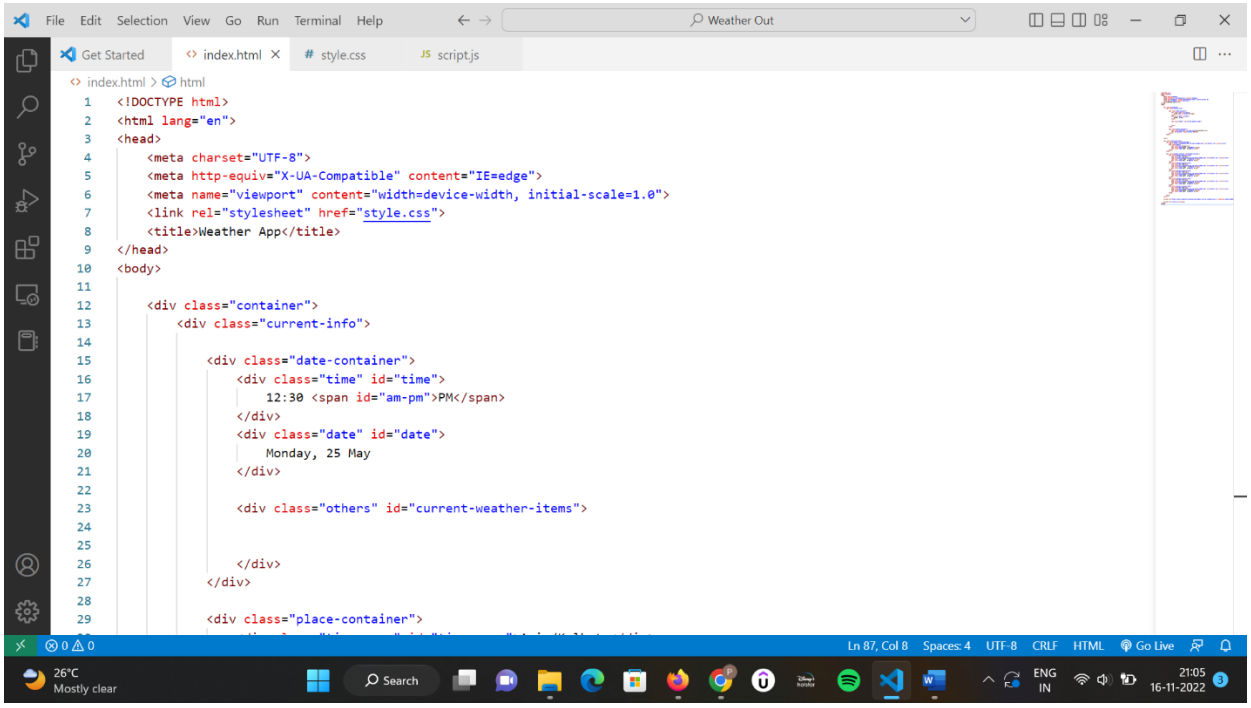
- **Declarative:** React makes it painless to create interactive UIs. Design simple views for each state in your application, and React will efficiently update and render just the right components when your data changes. Declarative views make your code more predictable, simpler to understand, and easier to debug.
- **Component-Based:** Build encapsulated components that manage their own state, then compose them to make complex UIs. Since component logic is written in JavaScript instead of templates, you can easily pass rich data through your app and keep the state out of the DOM.
- **Learn Once, Write Anywhere:** We don't make assumptions about the rest of your technology stack, so you can develop new features in React without rewriting existing code. React can also render on the server using Node and power mobile apps using React Native.

CSS:
Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media. CSS is among the core languages of the open web and is standardized across Web browsers according to W3C specifications. Previously, the development of various parts of CSS specification was done synchronously, which allowed the versioning of the latest recommendations. You might have heard about CSS1, CSS2.1, or even CSS3. There will never be a CSS3 or a CSS4; rather, everything is now CSS without a version number. After CSS 2.1, the scope of the specification increased significantly and the progress on different CSS modules started to differ so much, that it became more effective to develop and release recommendations separately per module. Instead of versioning the CSS specification, W3C now periodically takes a snapshot of the latest stable state of the CSS specification and individual modules progress. CSS modules now have version numbers, or levels, such as CSS Colour Module Level 5.

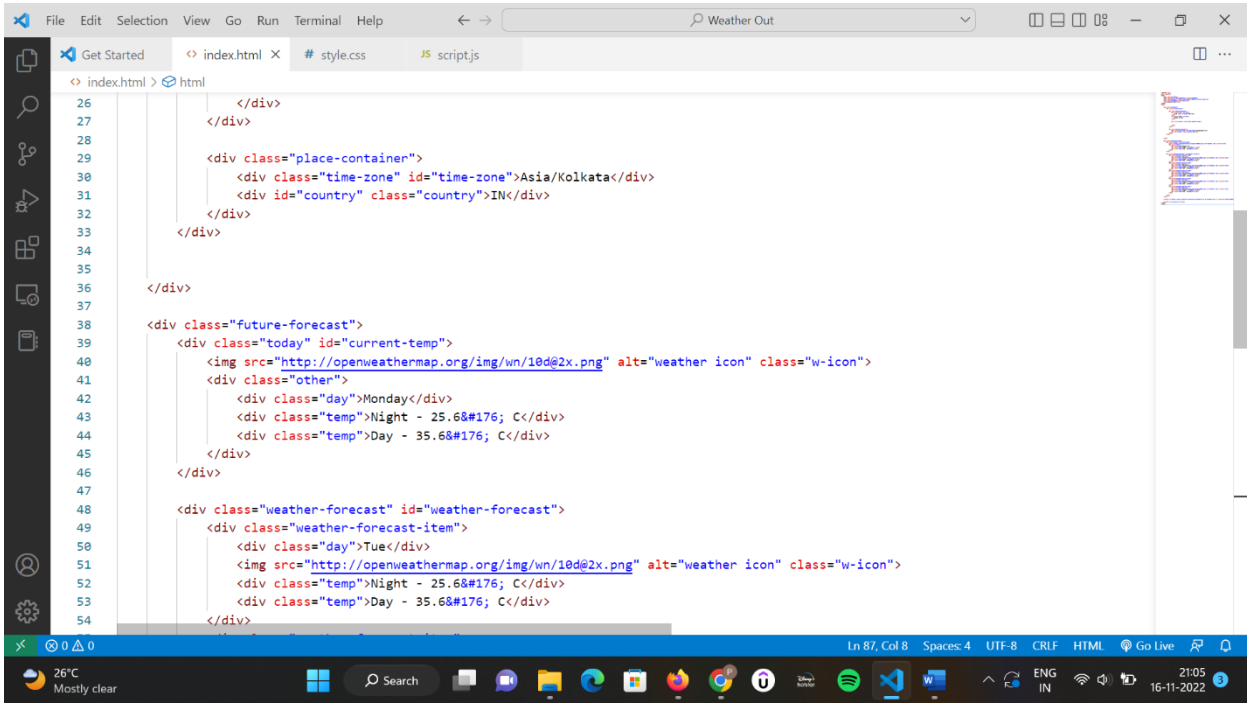
JavaScript:
JavaScript (JS) is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. While it is most well-known as the scripting language for Web pages, many non-browser environments also use it, such as Node.js, Apache CouchDB and Adobe Acrobat. JavaScript is a prototype-based, multi-paradigm, single-threaded, dynamic language, supporting object-oriented, imperative, and declarative (e.g. functional programming) styles. Read more about JavaScript.

This section is dedicated to the JavaScript language itself, and not the parts that are specific to Web pages or other host environments. For information about APIs that are specific to Webpages, please see Web APIs and DOM. The standards for JavaScript are the ECMAScript Language Specification (ECMA-262) and the ECMAScript Internationalization API specification (ECMA-402). As soon as one browser implements a feature, we try to document it. This means that cases where some proposals for new ECMAScript features have already been implemented in browsers, documentation and examples in MDN articles may use some of those new features. Most of the time, this happens between the stages 3 and 4, and is usually before the spec is officially published. Do not confuse JavaScript with the Java programming language. Both "Java" and "JavaScript" are trademarks or registered trademarks of Oracle in the U.S. and other countries. However, the two programming languages have very different syntax, semantics, and use.

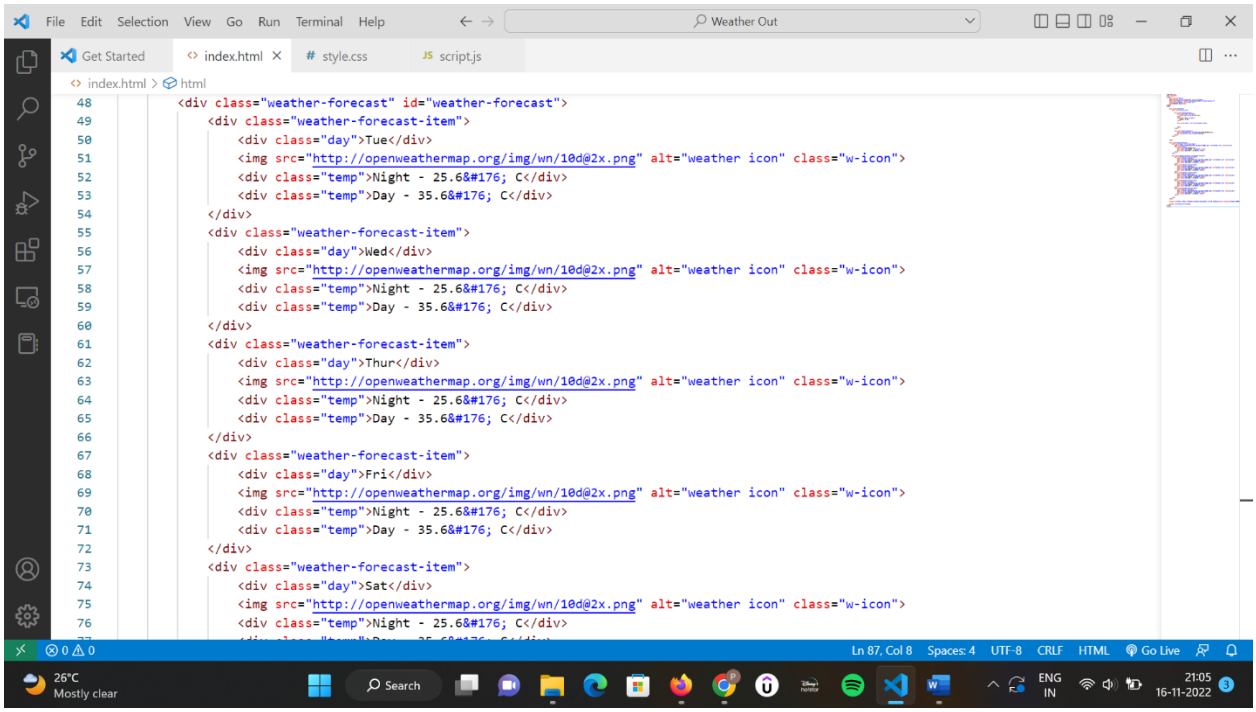
HTML



```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="style.css">
    <title>Weather App</title>
</head>
<body>

    <div class="container">
        <div class="current-info">

            <div class="date-container">
                <div class="time" id="time">
                    12:30 <span id="am-pm">PM</span>
                </div>
                <div class="date" id="date">
                    Monday, 25 May
                </div>

                <div class="others" id="current-weather-items">


                </div>
            </div>

            <div class="place-container">
```



```
                </div>
            </div>

            <div class="place-container">
                <div class="time-zone" id="time-zone">Asia/Kolkata</div>
                <div id="country" class="country">IN</div>
            </div>
        </div>


    </div>

    <div class="future-forecast">
        <div class="today" id="current-temp">
            <img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
            <div class="other">
                <div class="day">Monday</div>
                <div class="temp">Night - 25.6&#176; C</div>
                <div class="temp">Day - 35.6&#176; C</div>
            </div>
        </div>

        <div class="weather-forecast" id="weather-forecast">
            <div class="weather-forecast-item">
                <div class="day">Tue</div>
                <img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
                <div class="temp">Night - 25.6&#176; C</div>
                <div class="temp">Day - 35.6&#176; C</div>
            </div>
```


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
index.html > html

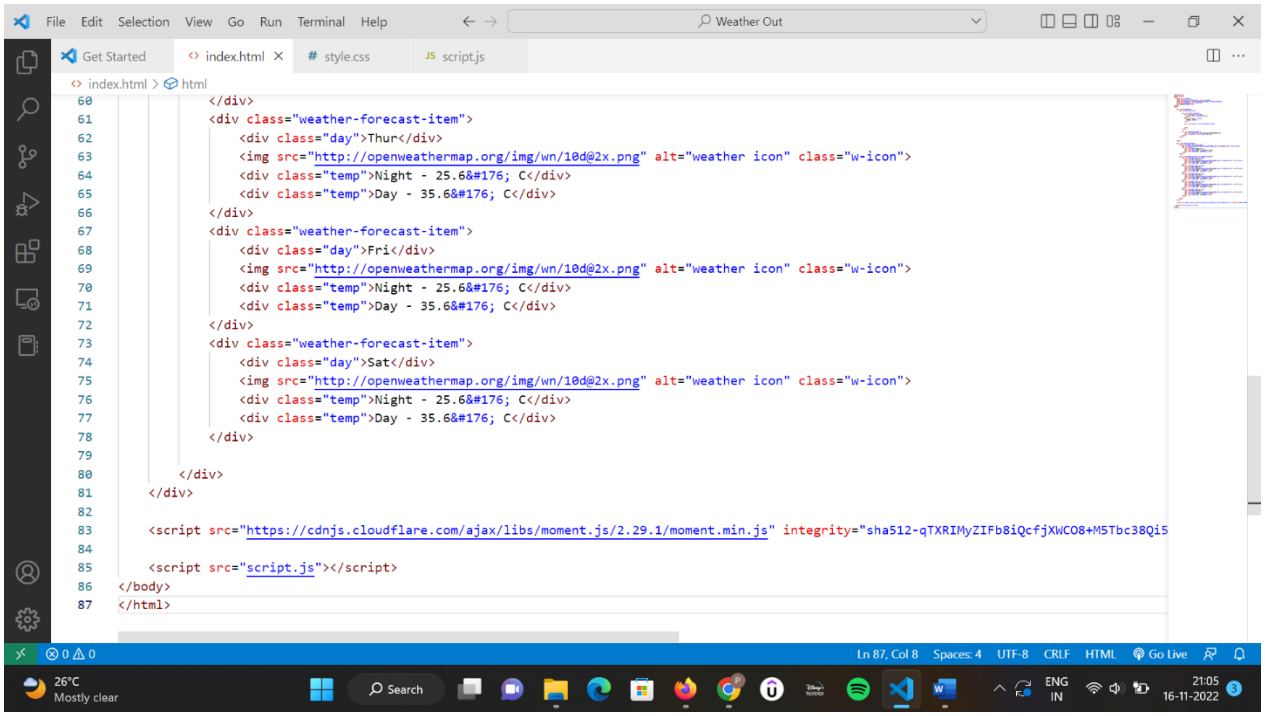
Tue
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6° C
Day - 35.6° C

Wed
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6° C
Day - 35.6° C

Thur
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6° C
Day - 35.6° C

Fri
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6° C
Day - 35.6° C

Sat
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6°
Ln 87, Col 8 Spaces: 4 UTF-8 CRLF HTML Go Live
26°C
Mostly clear
Search
ENG
IN
21:05
16-11-2022


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
index.html > html

Thur
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6° C
Day - 35.6° C

Fri
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6° C
Day - 35.6° C

Sat
<img src="http://openweathermap.org/img/wn/10d@2x.png" alt="weather icon" class="w-icon">
Night - 25.6° C
Day - 35.6° C

<script src="https://cdnjs.cloudflare.com/ajax/libs/moment.js/2.29.1/moment.min.js" integrity="sha512-qTXRIMyZIFb8iQcfjXWCO8+M5Tbc38Qi5
<script src="script.js"></script>
</body>
</html>
Ln 87, Col 8 Spaces: 4 UTF-8 CRLF HTML Go Live
26°C
Mostly clear
Search
ENG
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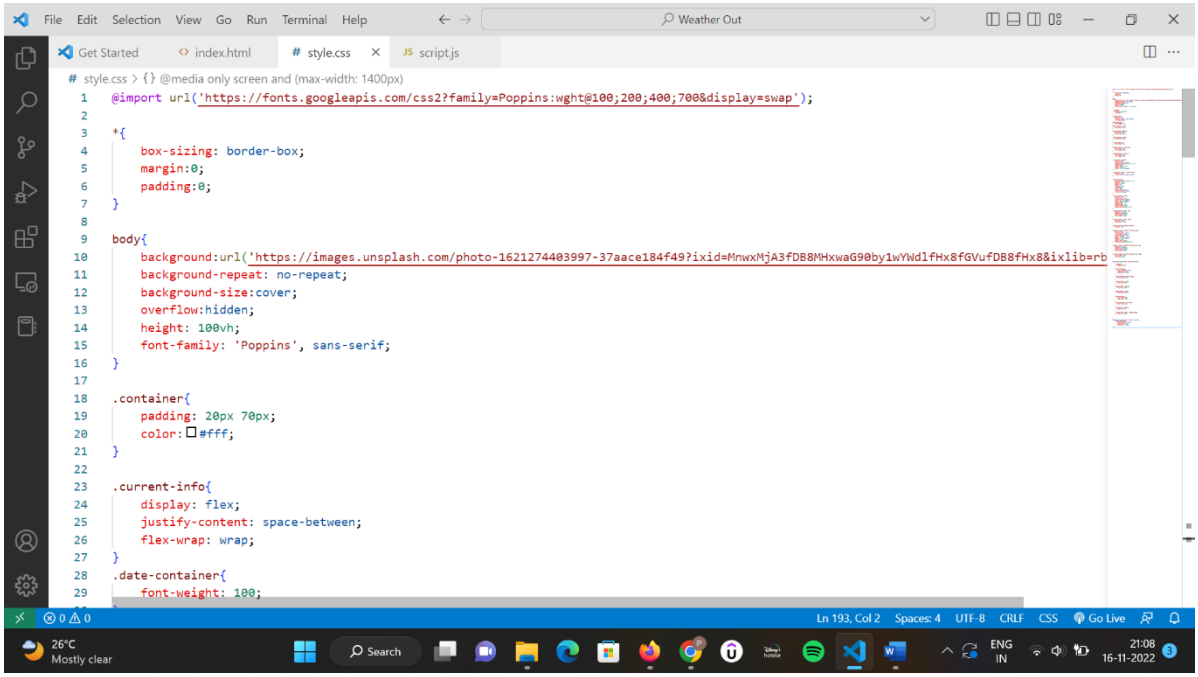
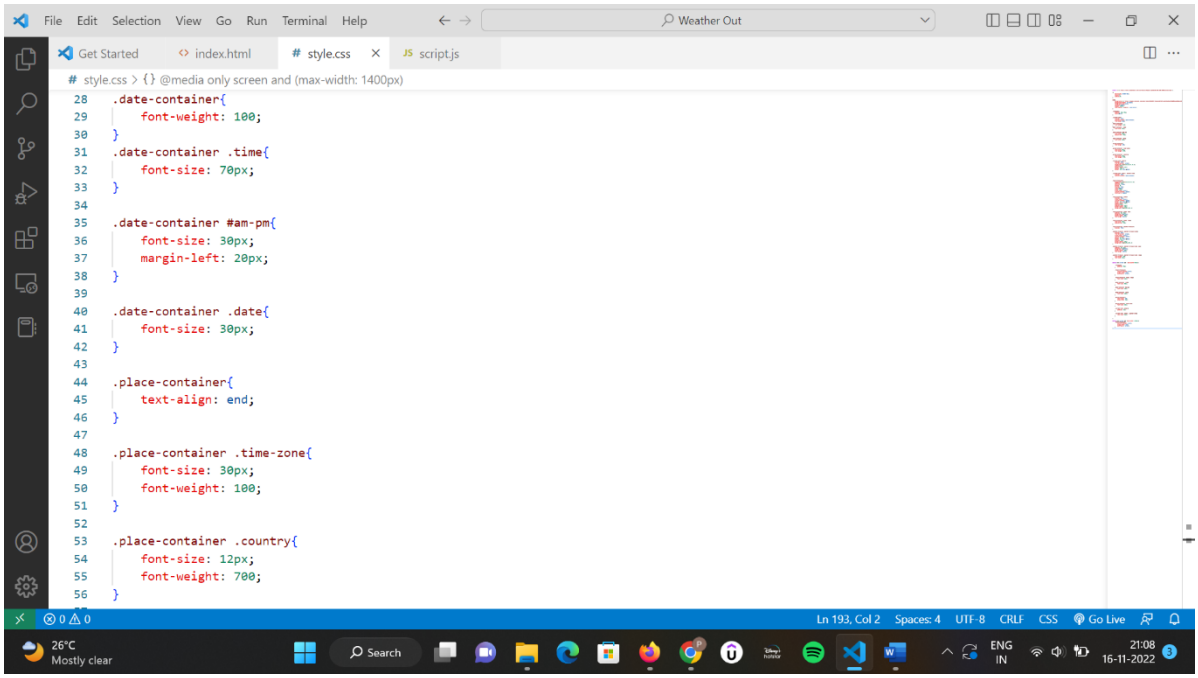
21:05
16-11-2022

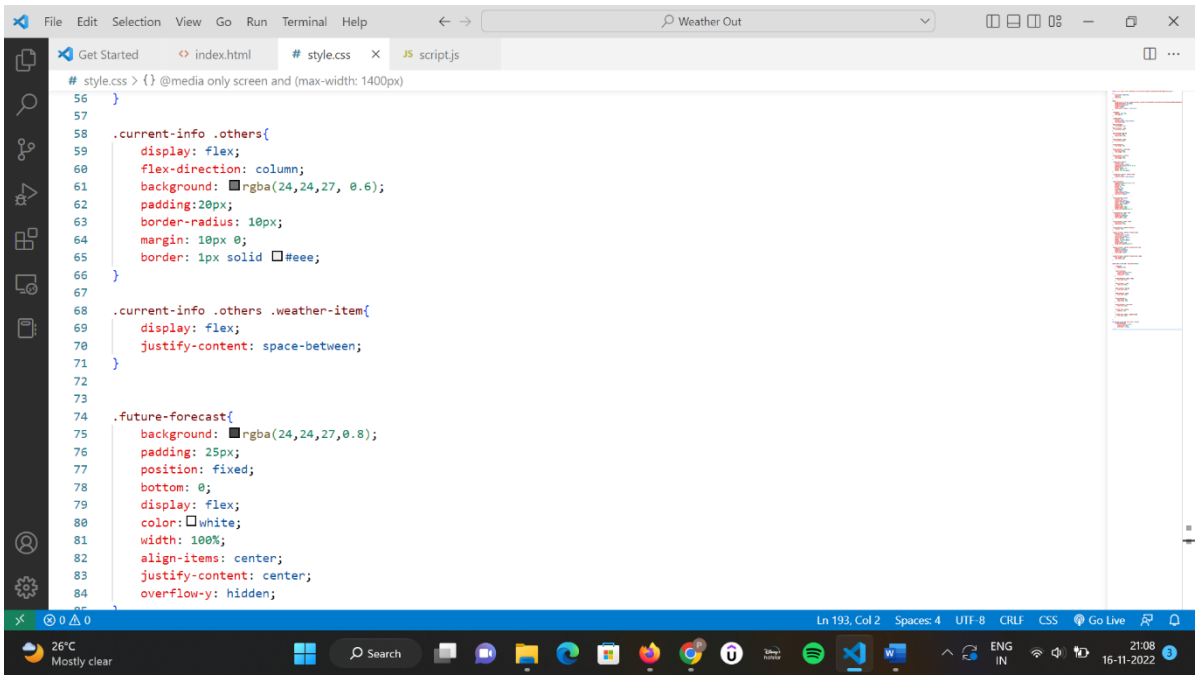
CSS

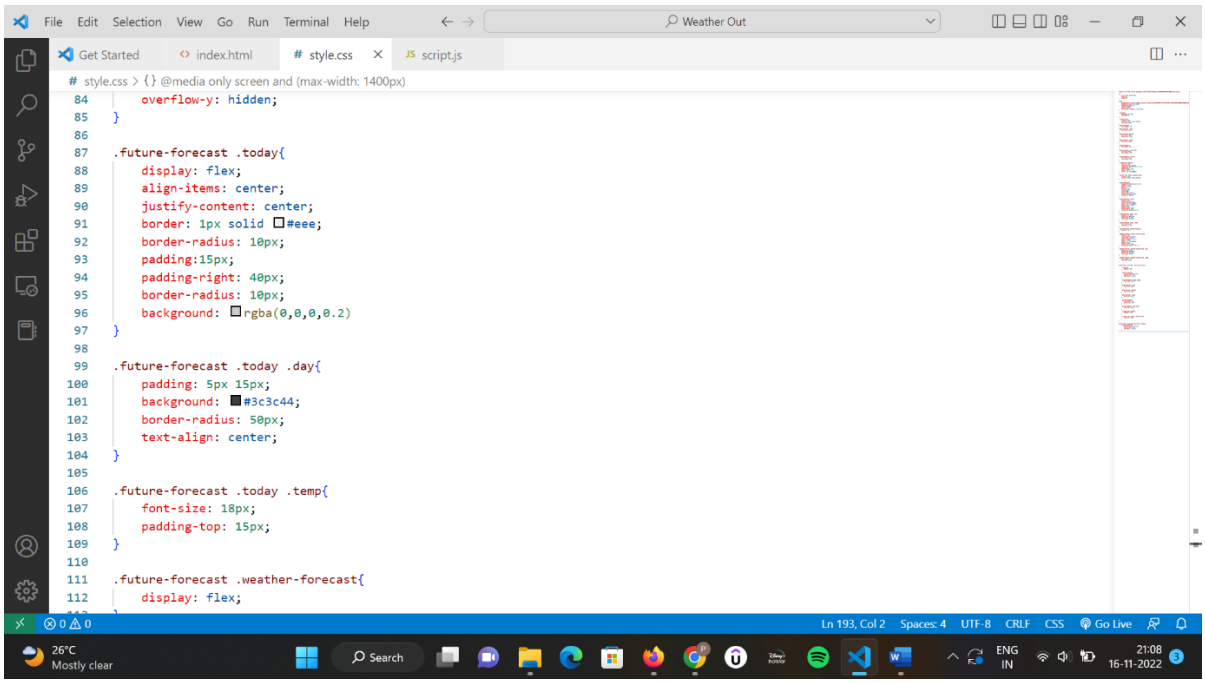


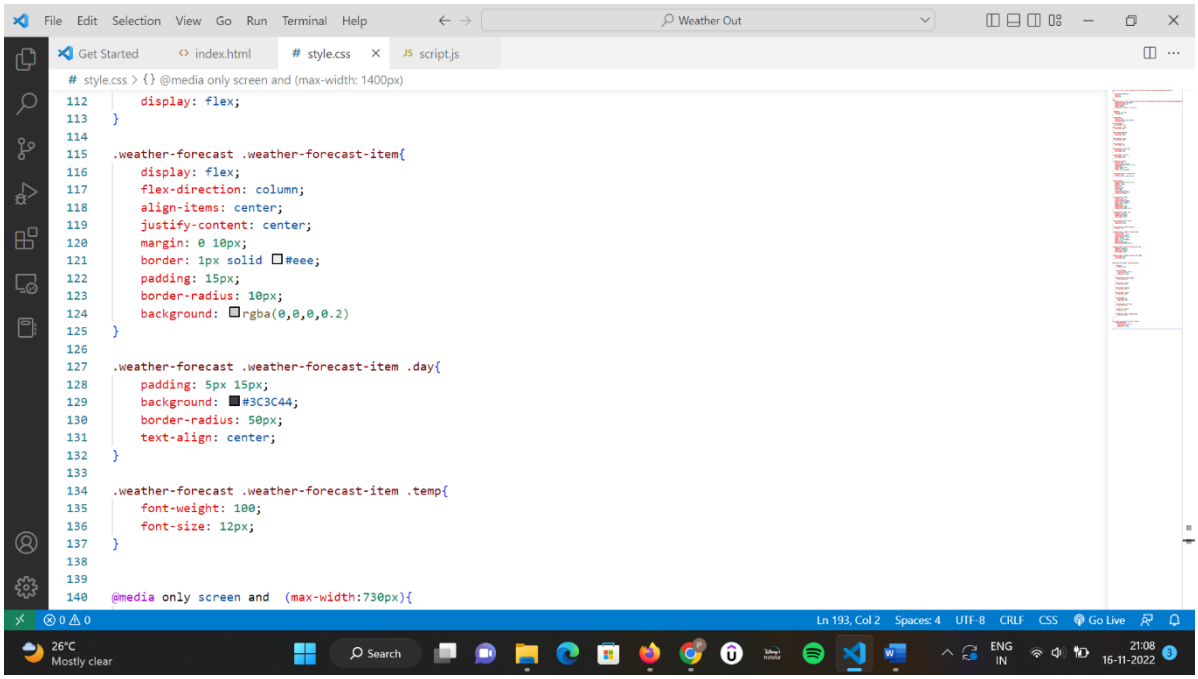
```
@import url('https://fonts.googleapis.com/css2?family=Poppins:wght@100;200;400;700&display=swap');

*{
    box-sizing: border-box;
    margin:0;
    padding:0;
}

body{
    background:url('https://images.unsplash.com/photo-1621274403997-37aace184f49?ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&ixlib=rb
    background-repeat: no-repeat;
    background-size:cover;
    overflow:hidden;
    height: 100vh;
    font-family: 'Poppins', sans-serif;
}

.container{
    padding: 20px 70px;
    color: #fff;
}

.current-info{
    display: flex;
    justify-content: space-between;
    flex-wrap: wrap;
}
.date-container{
    font-weight: 100;
```

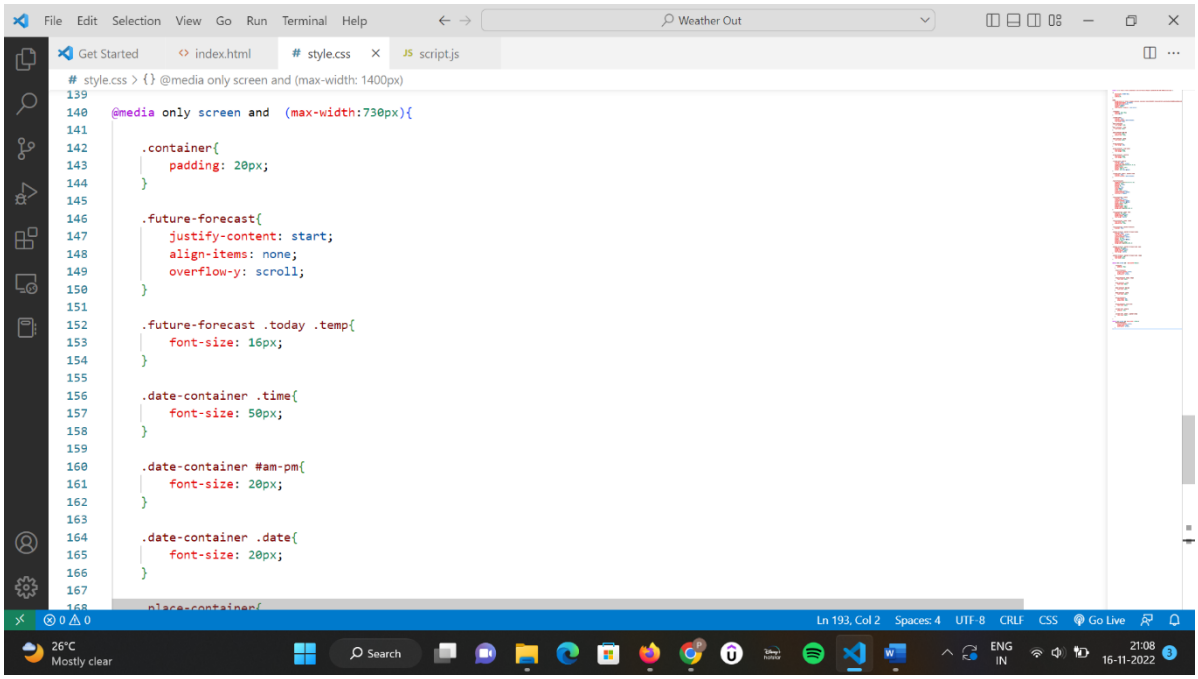


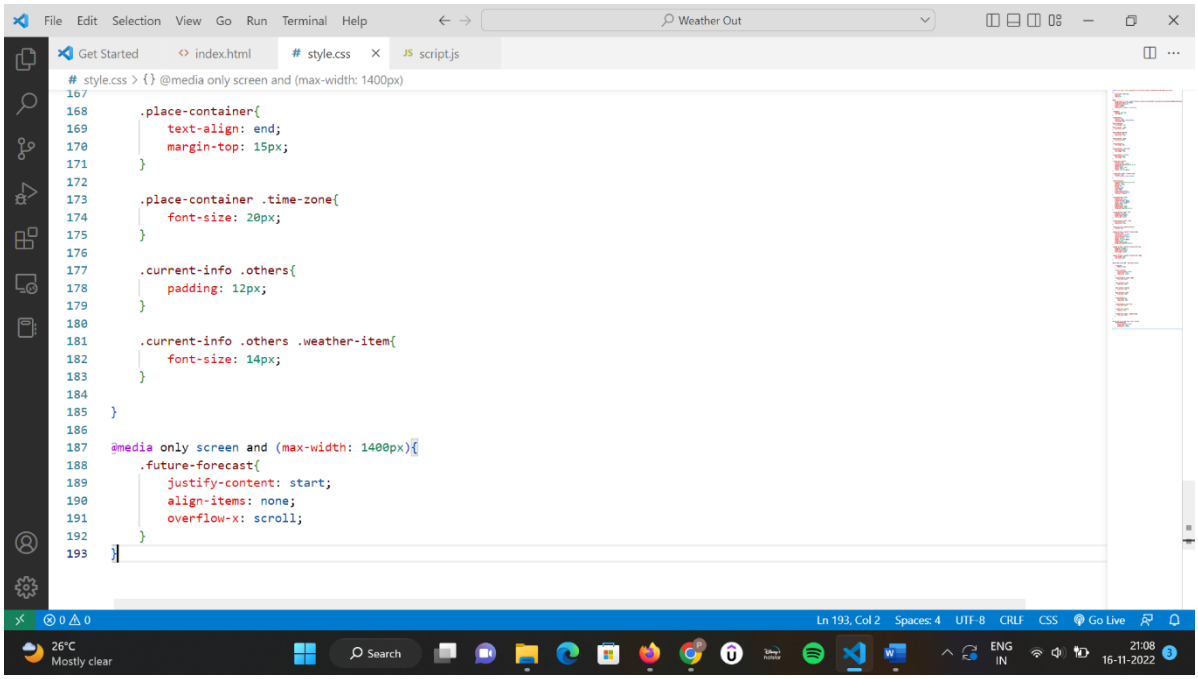
```
.date-container{
    font-weight: 100;
}
.date-container .time{
    font-size: 70px;
}

.date-container #am-pm{
    font-size: 30px;
    margin-left: 20px;
}

.date-container .date{
    font-size: 30px;
}

.place-container{
    text-align: end;
}

.place-container .time-zone{
    font-size: 30px;
    font-weight: 100;
}

.place-container .country{
    font-size: 12px;
    font-weight: 700;
}
```


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
style.css > { } @media only screen and (max-width: 1400px)
56 }
57
58 .current-info .others{
59 display: flex;
60 flex-direction: column;
61 background: rgba(24,24,27, 0.6);
62 padding:20px;
63 border-radius: 10px;
64 margin: 10px 0;
65 border: 1px solid #eee;
66 }
67
68 .current-info .others .weather-item{
69 display: flex;
70 justify-content: space-between;
71 }
72
73
74 .future-forecast{
75 background: rgba(24,24,27,0.8);
76 padding: 25px;
77 position: fixed;
78 bottom: 0;
79 display: flex;
80 color: white;
81 width: 100%;
82 align-items: center;
83 justify-content: center;
84 overflow-y: hidden;
Ln 193, Col 2 Spaces: 4 UTF-8 CRLF CSS Go Live
26°C
Mostly clear
Search
ENG
IN
21:08
16-11-2022


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
style.css > { } @media only screen and (max-width: 1400px)
84 overflow-y: hidden;
85 }
86
87 .future-forecast .today{
88 display: flex;
89 align-items: center;
90 justify-content: center;
91 border: 1px solid #eee;
92 border-radius: 10px;
93 padding:15px;
94 padding-right: 40px;
95 border-radius: 10px;
96 background: rgba(0,0,0,0.2)
97 }
98
99 .future-forecast .today .day{
100 padding: 5px 15px;
101 background: #3c3c44;
102 border-radius: 50px;
103 text-align: center;
104 }
105
106 .future-forecast .today .temp{
107 font-size: 18px;
108 padding-top: 15px;
109 }
110
111 .future-forecast .weather-forecast{
112 display: flex;
Ln 193, Col 2 Spaces: 4 UTF-8 CRLF CSS Go Live
26°C
Mostly clear
Search
ENG
IN
21:08
16-11-2022


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
style.css > {} @media only screen and (max-width: 1400px)
112 display: flex;
113 }
114
115 .weather-forecast .weather-forecast-item{
116 display: flex;
117 flex-direction: column;
118 align-items: center;
119 justify-content: center;
120 margin: 0 10px;
121 border: 1px solid #eee;
122 padding: 15px;
123 border-radius: 10px;
124 background: rgba(0,0,0,0.2)
125 }
126
127 .weather-forecast .weather-forecast-item .day{
128 padding: 5px 15px;
129 background: #3C3C44;
130 border-radius: 50px;
131 text-align: center;
132 }
133
134 .weather-forecast .weather-forecast-item .temp{
135 font-weight: 100;
136 font-size: 12px;
137 }
138
139
140 @media only screen and (max-width:730px){
Ln 193, Col 2 Spaces: 4 UTF-8 CRLF CSS Go Live
26°C Mostly clear
Search
ENG IN
21:08 16-11-2022


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
style.css > {} @media only screen and (max-width: 1400px)
139
140 @media only screen and (max-width:730px){
141
142 .container{
143 padding: 20px;
144 }
145
146 .future-forecast{
147 justify-content: start;
148 align-items: none;
149 overflow-y: scroll;
150 }
151
152 .future-forecast .today .temp{
153 font-size: 16px;
154 }
155
156 .date-container .time{
157 font-size: 50px;
158 }
159
160 .date-container #am-pm{
161 font-size: 20px;
162 }
163
164 .date-container .date{
165 font-size: 20px;
166 }
167
Ln 193, Col 2 Spaces: 4 UTF-8 CRLF CSS Go Live
26°C Mostly clear
Search
ENG IN
21:08 16-11-2022


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
style.css > {} @media only screen and (max-width: 1400px)
.place-container{
text-align: end;
margin-top: 15px;
}
.place-container .time-zone{
font-size: 20px;
}
.current-info .others{
padding: 12px;
}
.current-info .others .weather-item{
font-size: 14px;
}
}
@media only screen and (max-width: 1400px){
.future-forecast{
justify-content: start;
align-items: none;
overflow-x: scroll;
}
}
Ln 193, Col 2 Spaces: 4 UTF-8 CRLF CSS Go Live
26°C
Mostly clear
Search
ENG
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21:08
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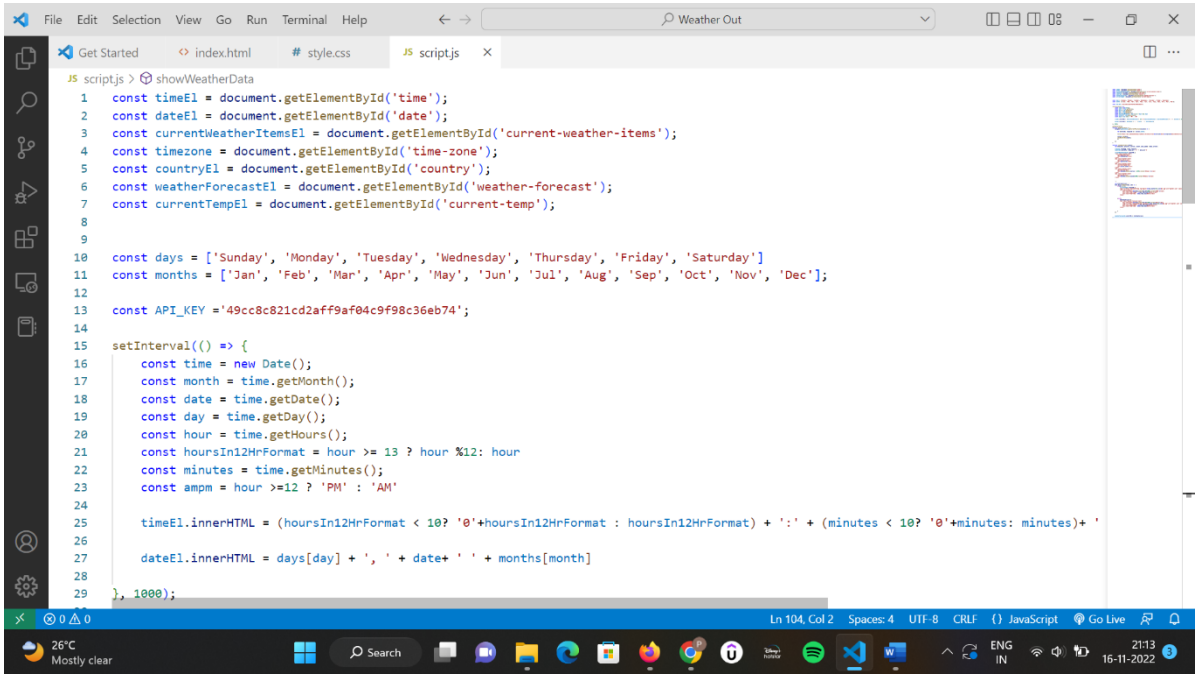
JAVASCRIPT


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
script.js > showWeatherData
const timeEl = document.getElementById('time');
const dateEl = document.getElementById('date');
const currentWeatherItemsEl = document.getElementById('current-weather-items');
const timezone = document.getElementById('time-zone');
const countryEl = document.getElementById('country');
const weatherForecastEl = document.getElementById('weather-forecast');
const currentTempEl = document.getElementById('current-temp');
const days = ['Sunday', 'Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday']
const months = ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct', 'Nov', 'Dec'];
const API_KEY ='49cc8c821cd2aff9af04c9f98c36eb74';
setInterval(() => {
const time = new Date();
const month = time.getMonth();
const date = time.getDate();
const day = time.getDay();
const hour = time.getHours();
const hoursIn12HrFormat = hour >= 13 ? hour %12: hour
const minutes = time.getMinutes();
const ampm = hour >=12 ? 'PM' : 'AM'
timeEl.innerHTML = (hoursIn12HrFormat < 10? '0'+hoursIn12HrFormat : hoursIn12HrFormat) + ':' + (minutes < 10? '0'+minutes: minutes)+ '
dateEl.innerHTML = days[day] + ', ' + date+ ' ' + months[month]
}, 1000);
Ln 104, Col 2 Spaces: 4 UTF-8 CRLF {} JavaScript Go Live
26°C
Mostly clear
Search
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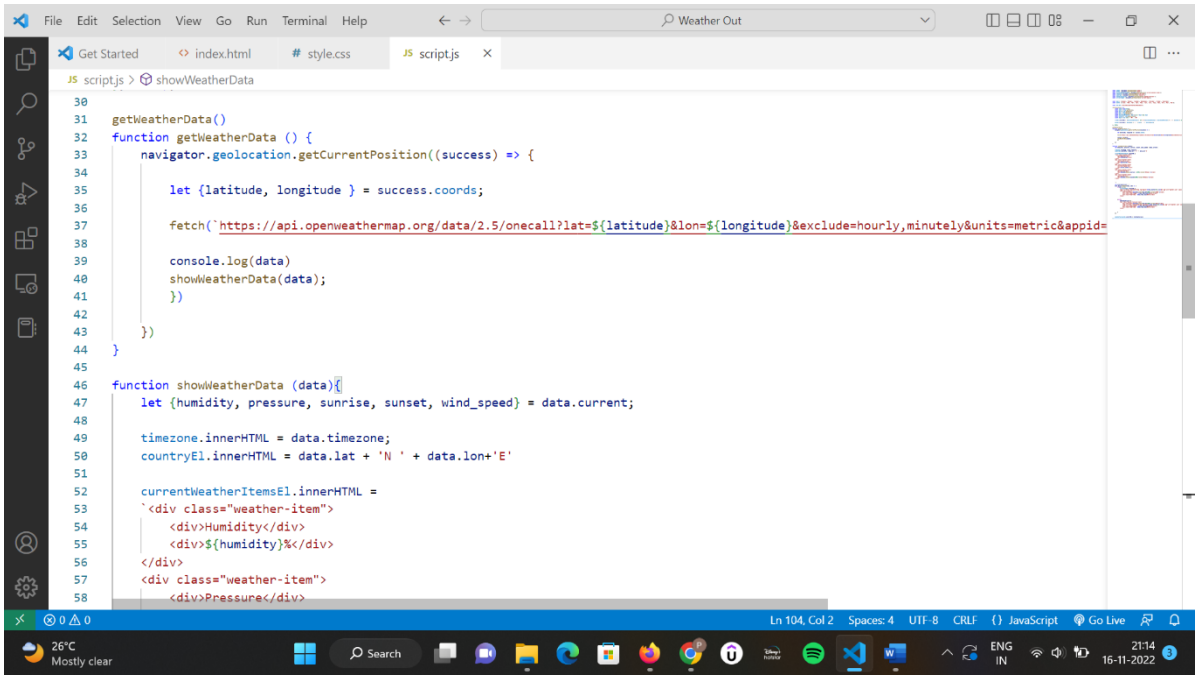
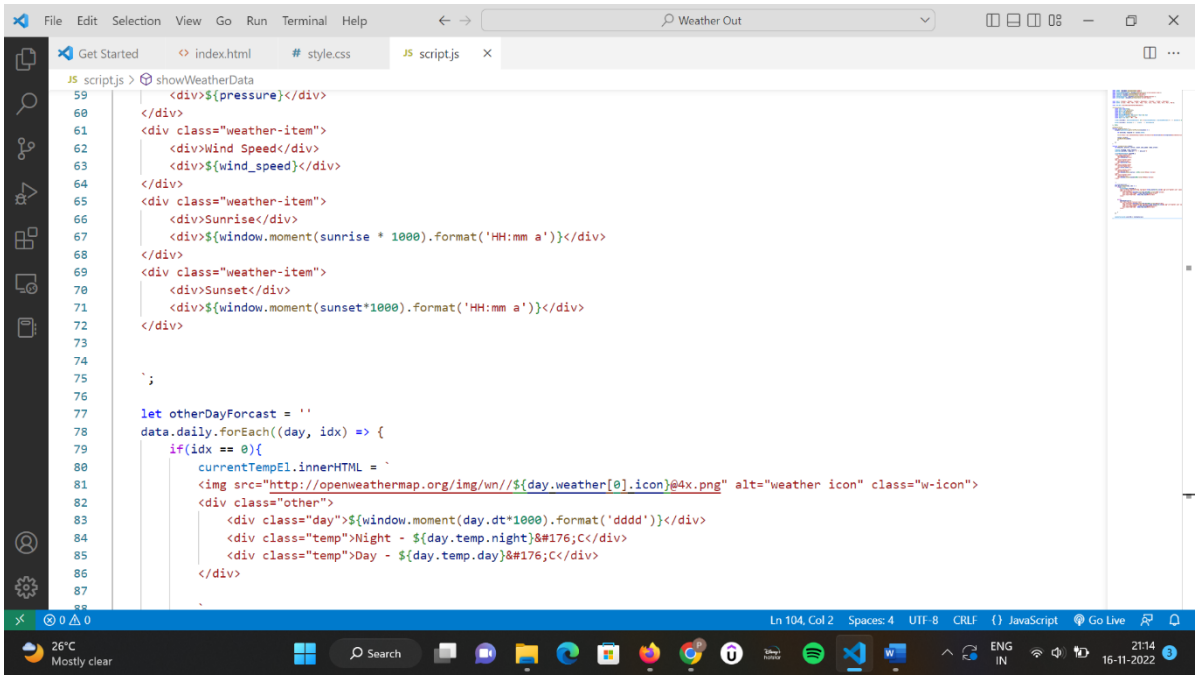
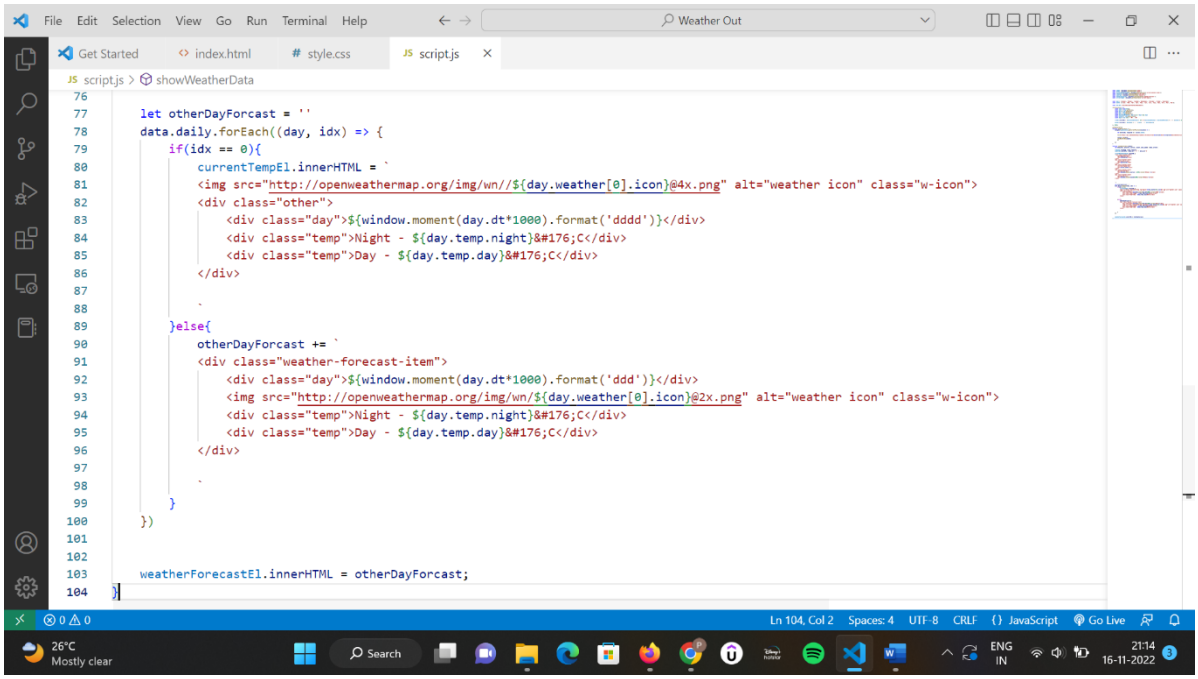
21:13
16-11-2022



```
getWeatherData()
function getWeatherData () {
    navigator.geolocation.getCurrentPosition((success) => {

        let {latitude, longitude } = success.coords;

        fetch(`https://api.openweathermap.org/data/2.5/onecall?lat=${latitude}&lon=${longitude}&exclude=hourly,minutely&units=metric&appid=

        console.log(data)
        showWeatherData(data);
        })

    })
}

function showWeatherData (data){
    let {humidity, pressure, sunrise, sunset, wind_speed} = data.current;

    timezone.innerHTML = data.timezone;
    countryEl.innerHTML = data.lat + 'N ' + data.lon+'E'

    currentWeatherItemsEl.innerHTML =
    `<div class="weather-item">
        <div>Humidity</div>
        <div>${humidity}%</div>
    </div>
    <div class="weather-item">
        <div>Pressure</div>
```



```
        <div>${pressure}</div>
    </div>
    <div class="weather-item">
        <div>Wind Speed</div>
        <div>${wind_speed}</div>
    </div>
    <div class="weather-item">
        <div>Sunrise</div>
        <div>${window.moment(sunrise * 1000).format('HH:mm a')}</div>
    </div>
    <div class="weather-item">
        <div>Sunset</div>
        <div>${window.moment(sunset*1000).format('HH:mm a')}</div>
    </div>


    `;

    let otherDayForcast = ''
    data.daily.forEach((day, idx) => {
        if(idx == 0){
            currentTempEl.innerHTML = `
            <img src="http://openweathermap.org/img/wn//${day.weather[0].icon}@4x.png" alt="weather icon" class="w-icon">
            <div class="other">
                <div class="day">${window.moment(day.dt*1000).format('dddd')}</div>
                <div class="temp">Night - ${day.temp.night}&#176;C</div>
                <div class="temp">Day - ${day.temp.day}&#176;C</div>
            </div>

            `
```


File Edit Selection View Go Run Terminal Help
Weather Out
Get Started
index.html
style.css
script.js
script.js > showWeatherData
let otherDayForcast = ''
data.daily.forEach((day, idx) => {
if(idx == 0){
currentTempEl.innerHTML = `
<img src="http://openweathermap.org/img/wn//${day.weather[0].icon}@4x.png" alt="weather icon" class="w-icon">

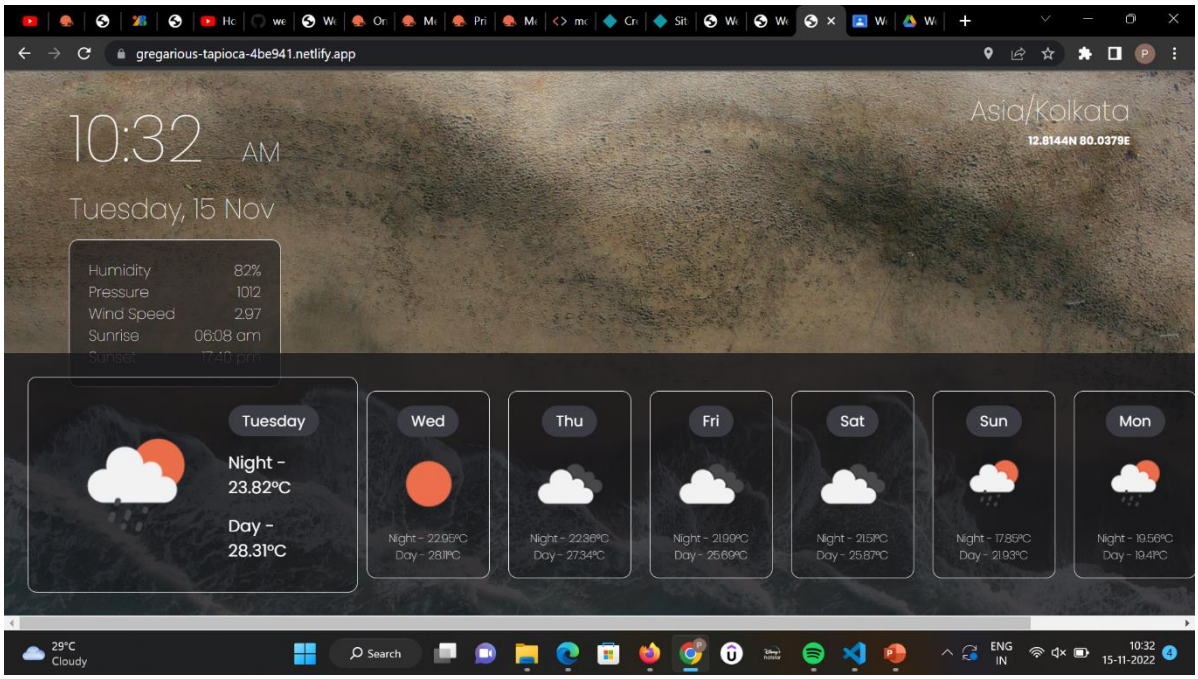
${window.moment(day.dt*1000).format('dddd')}
Night - ${day.temp.night}°C
Day - ${day.temp.day}°C

`
}else{
otherDayForcast += `

${window.moment(day.dt*1000).format('ddd')}
<img src="http://openweathermap.org/img/wn/${day.weather[0].icon}@2x.png" alt="weather icon" class="w-icon">
Night - ${day.temp.night}°C
Day - ${day.temp.day}°C

`
}
})
weatherForecastEl.innerHTML = otherDayForcast;
}
Ln 104, Col 2 Spaces: 4 UTF-8 CRLF {} JavaScript Go Live
26°C Mostly clear
Search
ENG IN
21:14 16-11-2022

OUTPUT-


gregarious-tapioca-4be941.netlify.app
10:32 AM
Tuesday, 15 Nov
Asia/Kolkata
12.8144N 80.0379E
Humidity 82%
Pressure 1012
Wind Speed 2.97
Sunrise 06:08 am
Tuesday
Night - 23.82°C
Day - 28.31°C
Wed
Thu
Fri
Sat
Sun
Mon
29°C Cloudy
Search
ENG IN
10:32 15-11-2022

Chapter 5

CONCLUSIONS

The **Weather App Development** has been completed. All the required functionalities have been added. The Tech stack has been explained above.

REFERENCES

1. Microsoft Visual Studio
   http://en.wikipedia.org/wiki/Microsoft_Visual_Studio#Visual_Studio_2005
2. Open Weather API: https://openweathermap.org/api/one-call-3
3. React: https://reactjs.org/