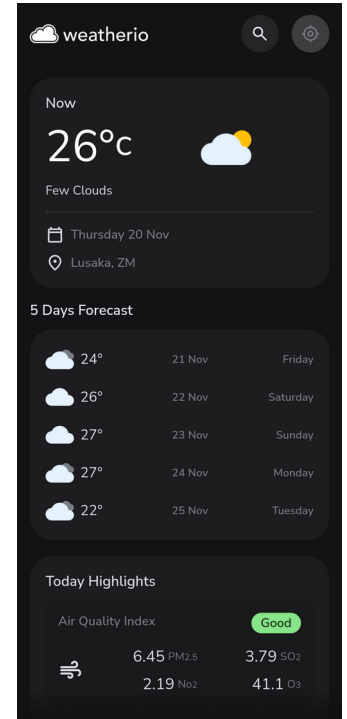




INFORMATION AND COMMUNICATIONS UNIVERSITY
SCHOOL OF ENGINEERING
IWD FINAL COURSE PROJECT

FULL NAME	:MWIZA SIMONDA
PROGRAM	:ENVIRONMENTAL MANAGEMENT SYSTEM
STUDENT #	:2310370210
LECTURER	:BILLY MUNYEBYEMBE
LECTURER#	+260964063079/+260776996696
COURSE	:IWD
PROJECT	:JUNE 2024 PROJECT
DUE DATE	:25th November, 2024

Weatherio Website Documentation



Introduction

Weatherio is a web application that provides real-time weather information. It offers features such as viewing the current weather, a 5-day forecast, wind speed, temperature for the current day, sunrise and sunset times, air quality, humidity, visibility, feels like temperature, and atmospheric pressure.

The application is developed using HTML, CSS, and JavaScript, and it utilizes the OpenWeather API to fetch weather data for different cities around the world.

Project Overview

The Weather Website is a user-friendly and responsive web application that allows users to search for cities and get detailed weather information. The data is presented in a visually appealing format with easy-to-understand icons and labels.

Key Features:

- View current weather conditions (temperature, weather icon, and description).
- Get a 5-day weather forecast.
- Display wind speed and temperature every 2 hours for the current day.
- Show sunrise and sunset times for the selected city.
- Provide information about air quality, humidity, visibility, feels like temperature, and atmospheric pressure.

Getting Started:

Prerequisites

- Modern web browser (Chrome, Firefox, Safari, etc.).
- Internet connection to fetch weather data from the OpenWeather API.
- VScode with Live Server extension for running.

Project Structure

The project is organized into multiple files for better code organization and separation of concerns:

- index.html: The main HTML file that contains the user interface.
- style.css: The CSS file that defines the styling for the web application.
- api.js: Contains functions to interact with the OpenWeather API.
- module.js: Contains utility functions related to weather data conversion and calculations.
- app.js: Contains the main application logic, including event handling and rendering.
- route.js: Defines the application routes and handles URL hash changes.

HTML

index.html

The main HTML file contains the structure of the Weather Website. It consists of different sections, including a search bar, current weather display, forecast section, and additional weather details. The page is designed to be responsive and adapts to different screen sizes.

CSS

style.css

The `style.css` file contains all the CSS styles used to create a visually appealing and user-friendly interface. It defines global variables, reset styles, and custom styles for various components like buttons, cards, headers, and footers. The CSS is organized using class selectors for specific components and follows a mobile-first approach with media queries for responsive design.

JavaScript

api.js

The ``api.js`` file contains functions to interact with the OpenWeather API. It includes functions to fetch weather data based on city names and coordinates using asynchronous JavaScript (async/await) and the Fetch API. The API key required for accessing the OpenWeather API is stored as a constant.

module.js

The ``module.js`` file defines utility functions related to weather data conversion and calculations. It includes functions to convert temperature units from Kelvin to Celsius and Fahrenheit, convert wind speed units, and calculate air quality index (AQI) level and its corresponding message.

app.js

The ``app.js`` file contains the main application logic. It defines functions to update the weather information on the user interface based on the data fetched from the API. This file handles event listeners for user interactions, such as searching for a city, updating the UI for current weather and forecast, and displaying error messages when necessary.

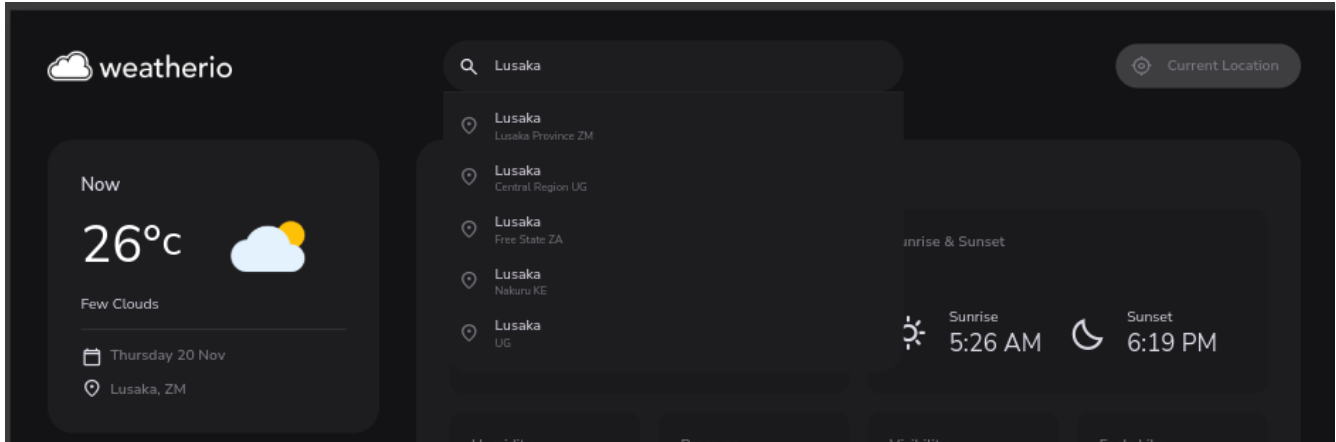
route.js

The ``route.js`` file manages the application's routing system. It defines routes for different sections of the website and handles URL hash changes. The routes are associated with specific functions in ``app.js`` to render the appropriate content based on the user's actions.

Functionality

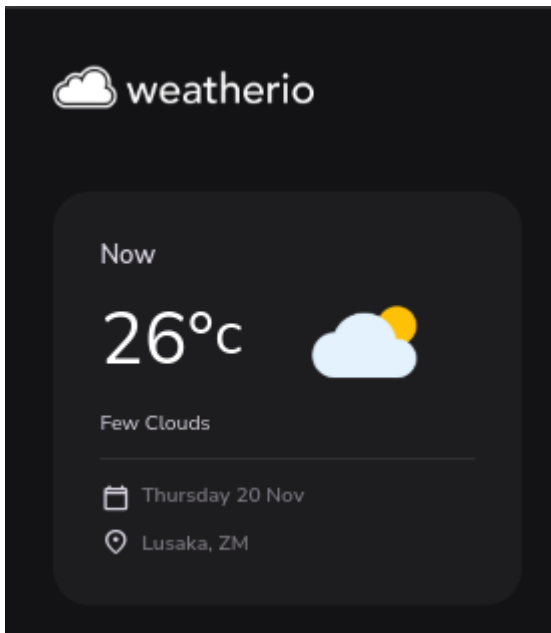
Search:

Users can search for a city to view its weather information.



Current Weather:

The current weather section displays the temperature, weather icon, and description



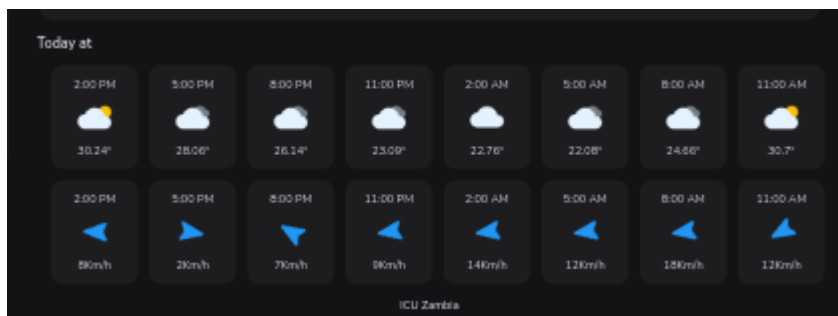
5-day forecast:

The 5-day forecast shows the weather conditions for the next five days.



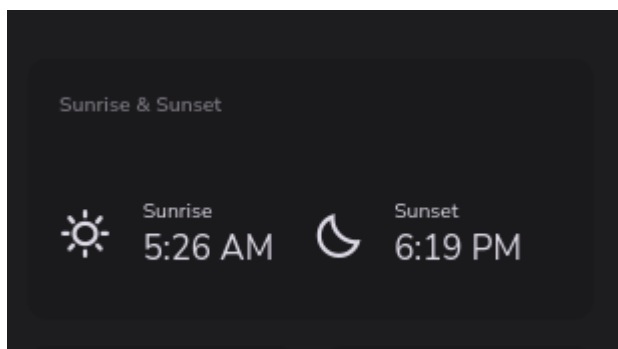
Hourly Forecast:

The hourly forecast provides wind speed and temperature details for the current day.



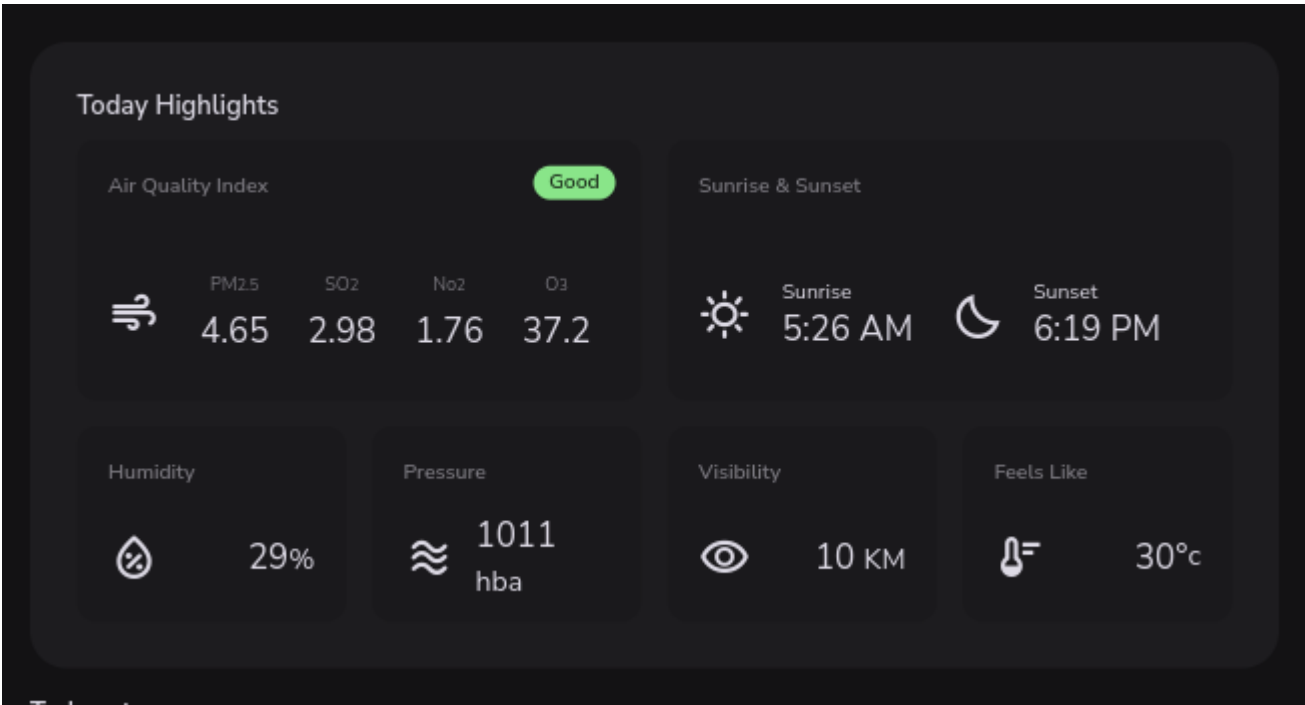
Sunrise and sunset:

Sunrise and sunset times are displayed for the selected city.



Additional weather details:

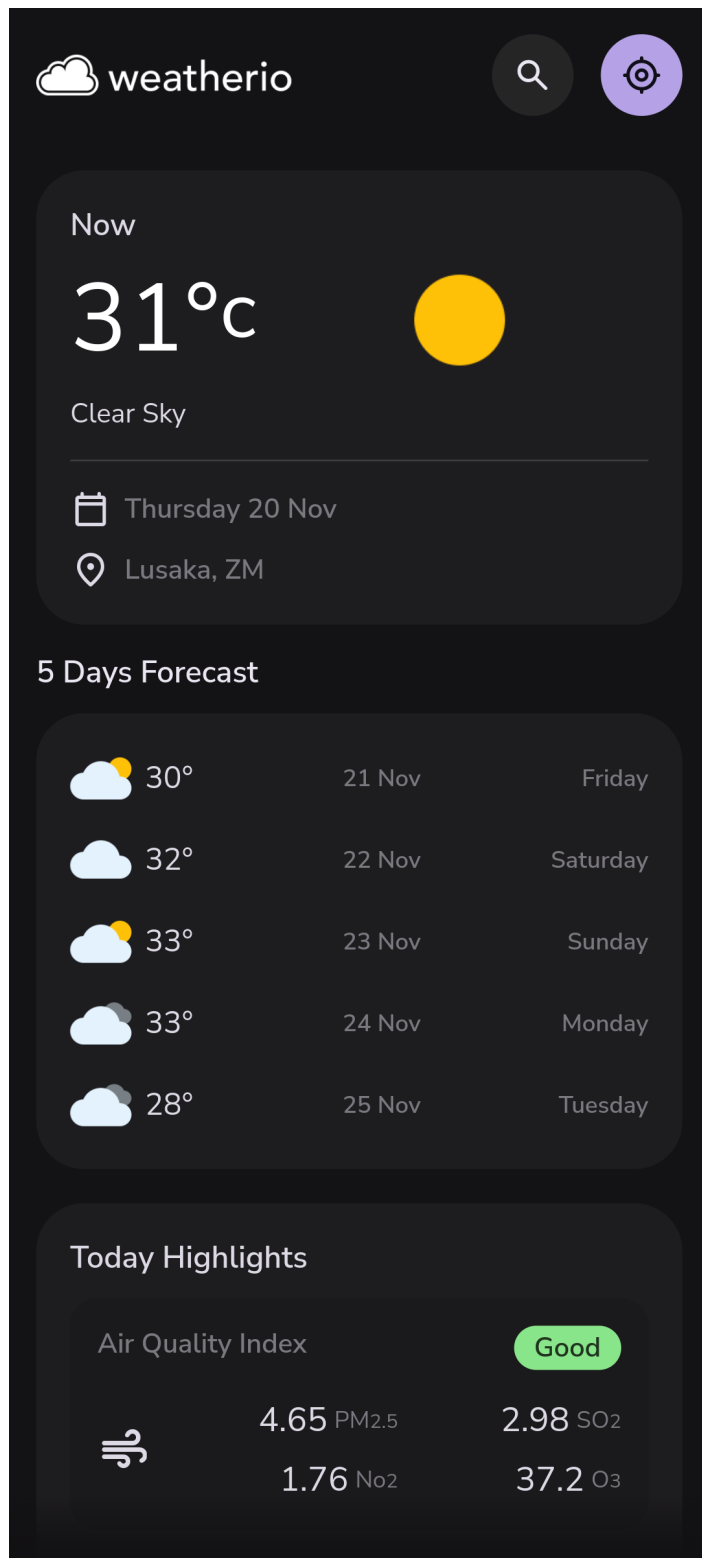
Additional weather details, including air quality, humidity, visibility, feels like temperature, and atmospheric pressure, are shown.



Responsive Design:

The application is responsive and adapts to different screen sizes.

SmartPhone



Desktop:

