

Software Requirements Specification (SRS) for Weather Website

Sabbir bin Shazid

212-15-4223

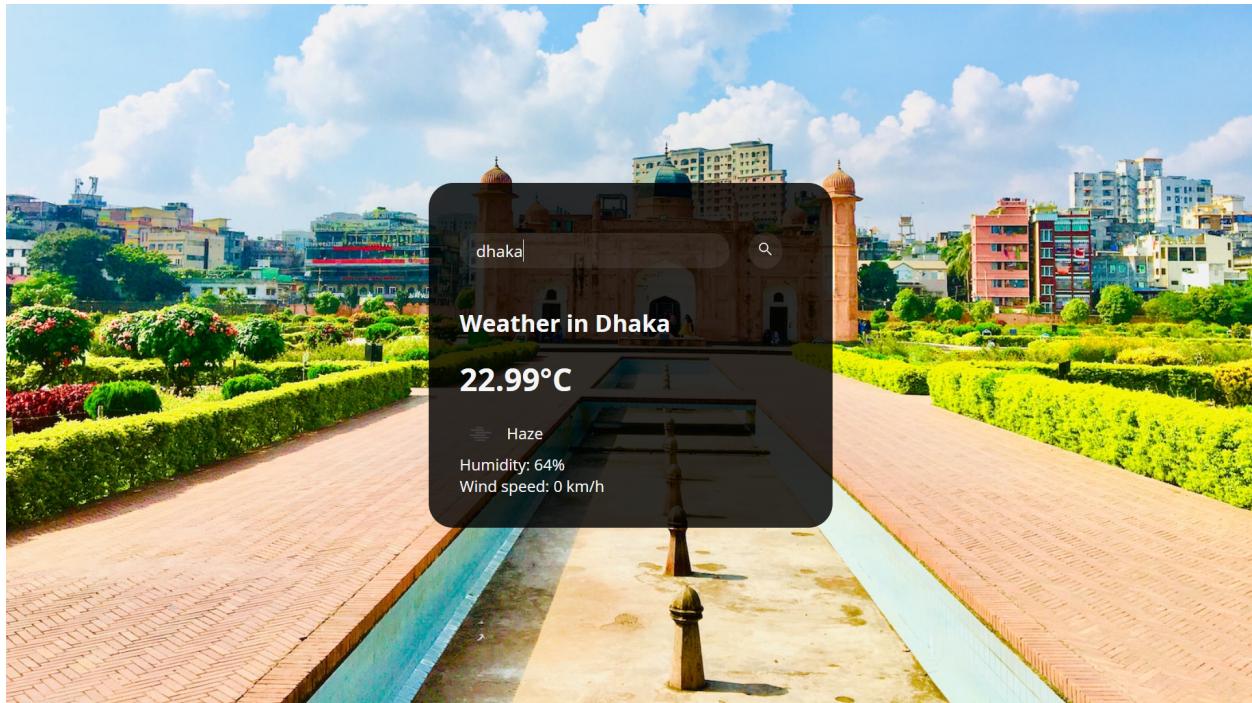


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1. Introduction

1.1 Purpose

The purpose of this document is to provide a comprehensive overview of the Weather Website, outlining its features, functionality, and constraints. This document serves as a guide for developers, testers, and other stakeholders involved in the project, ensuring a shared understanding of the system's requirements.

1.2 Scope

The Weather Website aims to deliver a user-friendly experience for accessing real-time weather information. By leveraging the OpenWeatherMap API and Unsplash API, the website provides accurate weather data and visually appealing background images. The scope encompasses the development and deployment of the website, emphasizing responsiveness, reliability, and security.

2. System Description

2.1 System Overview

The Weather Website is designed as a modern web application that seamlessly integrates with external APIs. Users can either manually search for weather information or allow the website to detect their location automatically. The OpenWeatherMap API supplies weather data, while the Unsplash API enriches the user interface with dynamic background images related to the user's location or current weather conditions.

2.2 Functional Requirements

2.2.1 Weather Data Retrieval

1. Users can initiate a weather search by entering a city name or geographical coordinates into the search bar.
2. The system communicates with the OpenWeatherMap API to retrieve detailed weather information, including current temperature, humidity, wind speed, and weather description.
3. Geolocation services are employed to automatically detect the user's coordinates for instant

weather updates.

2.2.2 Display of Weather Information

1. The website presents a clean and intuitive user interface, prominently displaying current weather conditions.
2. Real-time weather updates include temperature in Celsius, humidity percentage, wind speed in kilometers per hour, and a concise weather description.
3. Weather icons provide visual representation, enhancing user understanding.

2.2.3 Background Image Integration

1. The Unsplash API is utilized to fetch high-quality background images corresponding to the user's location or prevailing weather conditions.
2. Background images change dynamically, creating an immersive and visually appealing atmosphere.

2.2.4 User Interaction

1. Users can initiate a weather search by clicking the "Search" button or pressing the "Enter" key in the search bar.
2. The website provides responsive feedback during search operations.
3. User interactions are designed for simplicity, catering to users with varying levels of technical expertise.

2.3 Non-functional Requirements

2.3.1 Performance

1. The system must respond to user requests within three seconds to ensure a responsive user experience.
2. Asynchronous loading techniques are employed to optimize the retrieval of weather data and background images.

2.3.2 Reliability

1. The website gracefully handles API errors, providing meaningful error messages to users.
2. Continuous monitoring and automated error reporting mechanisms are implemented to ensure high availability.

2.3.3 User Experience

1. The user interface adheres to modern design principles, offering a clean and intuitive experience.
2. Background images complement the weather information, creating a visually engaging and context-aware interface.

2.3.4 Security

1. All communication between the website and APIs is secured using HTTPS.
2. User data, including search history, is not stored locally or remotely, prioritizing user privacy.

3. System Features

1. **Weather Search:** Users can enter a city name or coordinates in the search bar to retrieve weather information.
2. **Geolocation:** The system automatically detects the user's location and displays weather information accordingly.
3. **Weather Display:** Current weather conditions, including temperature, humidity, wind speed, and description, are prominently displayed.
4. **Background Image Display:** Dynamic background images related to the user's location or current weather conditions enhance the visual appeal of the website.

4. Constraints

1. The system's accuracy depends on the reliability and availability of the OpenWeatherMap and Unsplash APIs.
2. Continuous website availability relies on the stability of external APIs and the hosting infrastructure.

5. Glossary

- **API:** Application Programming Interface
- **SRS:** Software Requirements Specification
- **HTTPS:** Hypertext Transfer Protocol Secure

6. Revision History

- **Version 1.0:** Initial Release(21-9-2023)
- **Version 2.0:** Initial Release(24-9-2023)
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