Software Requirement Specifications
Weather Application
(SRS)

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ABSTRACT

Nowadays we face a huge problem that knowin real weather status instantly in such a place we need to know . Is often complex and challenges skills that involve observing and processing vast amount of data weather system can range from small short lived thunderstorms only a few miles in diameter,and lasting for days. so mostof the time we cannot get the real weather forcast and face a lot of troubles. We have another problem in weather for casting.To do this effectively technology can help a lot.In this android app is developed with the help of Android studio and ApI we will help the user to getti know about real time weather update of a particular place.

Keywords: Android, Weather forcasting, Android studio,API.

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1. Introduction

To Summarize and brief in short, weather App is the application of science and technology to pridict the condition of the atmosphere for a givin location on time.people have attempted to pridict the weather informally for millennia and formally since 19th century.weather forcasts are made by collecting quantative data about the cuurent state of the atmosphere,land and ocean and using meteorology to project how the atmosphere with change at a given place. It is very important to get educated on the current weather situation of the particular location as preferred since it effects the days to day life to everyone.He is a better source than any prevailing weather information.

This section provides a high-level overview of the app:

Purpose: The app's goal is to show accurate and real-time weather updates, forecasts, and alerts for users.

Scope: It will be available on mobile devices (Android and iOS) and as a web app, using weather data from external APIs like OpenWeatherMap.

- Users: The app targets casual users, travelers, and professionals needing detailed weather

LITERATURE SURVEY

Weather App as the name goes is an advanced yet highly promising system helping a tourist or any user to get accurate and best data in no time . This system is an abdroid application and uses web desiging languages as and its front End and ApIs. The application acts as a weather forcaster giving out outputs to the user for every inputs to give. To the system.The system is highly reliable as it uses foursquare API which are very accurate and same for the weather condition . The system tries the user to give a heads-up giving the weather condition to make sure that the user will be comfortable to visit the desire place . The system very flexibile in changing places to display places if the user wishes to . Now one can simply visit their portal search for their destination and they will easily find the information about weather condition of their destination for that particular date or future days.

Need of application

- Weather forcasting is crucial since it helps to determine future climate changes . With the user of latitude,we can determine the probability of snow and hail reaching the surface.we are able to identified the thermal energy from the sun that is exposed to a region . Climatology is the scientific study of climates, which in simple words mean weather condition over a peroid . A bunch of studies within atmospheric science also takes the help of the varibles and average of short term and long term weather conditions accumulated . Climatology is different from metrology and can be divided into further areas Of study. Different approaches to this segment can be taken . currently our primary research goal is to motivate and helpthe development of efficint and effective measures of environment activity.

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2. Overall Description

This explains how the app will work and its core features:

2.1 Product Features

2.2

The app will include:

1. Real-time Weather Updates: Shows the current temperature, wind speed, rain, and other weather info.

2. Forecasts: Provides hourly and 7-day weather predictions.

3. Location Tracking: Automatically updates weather for your GPS location.

4. Severe Weather Alerts: Warns users about extreme conditions like storms or heatwaves.

5. Air Quality Data: Tells users about pollution levels in their area.

6. Sunrise/Sunset Times: Displays these for all supported locations.

7. Widgets: Allows quick weather access from your home screen.

2.3 Users

2.4

Casual Users: Want to check the weather quickly for daily activities.

Travelers: Need weather details for planning trips.

Professionals: Require more in-depth information, such as event planners or meteorologists.

2.3 Environment

The app works on mobile (Android 8+ and iOS 13+) and on any modern browser. It needs an internet connection for updates.

2.5 Assumptions

2.6

Users must have their GPS and internet turned on.

The app will use reliable APIs to fetch accurate weather information.

3. System Requirements

This part defines what the app should do (functional) and how it should perform (non-functional):

3.1 Functional Requirements

3.2

These are the essential features:

Fetch current weather for a user's location.

Allow users to manually add and monitor weather for specific locations.

Send notifications for severe weather events.

Show air quality levels (where supported).

Display forecasts (hourly and 7-day).

3.3 Non-Functional Requirements

3.4

These ensure the app performs well:

The app should load data in less than 2 seconds on a 4G network.

It must handle 1 million users at the same time without issues.

The interface should be easy to use and look good on all devices.

Data must be securely encrypted during transmission to protect user privacy.

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4. Design Constraints

This section lists limitations and rules:

The app must comply with privacy laws like GDPR, meaning location data should only be collected with the user's consent.

External APIs used must be highly reliable (at least 99% uptime).

It must support both light and dark themes for better usability.

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5. Interfaces

This explains how the app interacts with users and other systems:

5.1 User Interface

5.2

The app should have:

A clean, user-friendly design for mobile and web users.

Options for users to switch between temperature units (Celsius/Fahrenheit).

5.3 Software Interfaces

5.4

Weather data will come from APIs like OpenWeatherMap.

Notifications will be sent using services like Firebase or Apple Push Notification Service.

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6. Appendices

This section includes extra details like sample UI mockups, links to API documentation, and references to laws or standards.

Summary of the SRS

The WeatherApp's SRS is a blueprint for developers and stakeholders, describing:

What the app must do (like show weather, send alerts, etc.).

How it will perform (fast loading, secure data).

The technology and design constraints it must follow.

Let me know if you’d like to explore any part in more detail!