Visvesvaraya Technological University, Belagavi – 590010

MOBILE APPLICATION DEVELOPMENT
MINI PROJECT REPORT
ON
WEATHER APP

Submitted by

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Under the guidance of

Dr Shrisha H S
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ST JOSEPH ENGINEERING COLLEGE
Vamanjoor, Mangaluru -575028, Karnataka
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CERTIFICATE

This is to certify that the Mini project entitled **"WEATHER APP"** *is a bonafide work carried out by*

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Students of sixth semester B.E. Computer Science & Engineering, and submitted as a part of the course Mobile Application Development Laboratory with Mini Project (18CSMP68), during the academic year 2022-2023.

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Dr Shrisha H S   **Dr Sridevi Saralaya**

Project Guide   **Head of the Department**

Name of the Examiners   **Signature with Date**

1. ------------------------   1. ------------------------

2. ------------------------   2. ------------------------

ABSTRACT

The weather app is a mobile application designed to provide users with comprehensive weather information, including details about sunrise and sunset times, wind speed, and atmospheric pressure. Its main objective is to deliver accurate and up-to-date data to help users effectively plan their day.

One of the key features of the weather app is its ability to provide precise sunrise and sunset times. By displaying this information, users can plan their outdoor activities accordingly, ensuring they make the most of the available daylight. Whether it's scheduling a morning jog or planning a sunset picnic, knowing the exact times of sunrise and sunset can enhance the overall experience.

With its user-friendly interface and intuitive design, the weather app makes it easy for users to access and understand the provided information. By delivering accurate data on sunrise and sunset times, wind speed, and atmospheric pressure, the app empowers users to plan their schedules effectively, adapt their activities to prevailing weather conditions, and make the most of their day.

ACKNOWLEDGEMENT

We dedicate this page to acknowledge and thank those responsible for the shaping of theproject. Without their guidance and help, the experience while constructing the dissertation would not have been so smooth and efficient.

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CHAPTER 1: INTRODUCTION

1.1. Introduction

To organize daily activities, make travel arrangements, and ensure personal safety in today's fast-paced world, access to reliable weather information is crucial. With the increased usage of smart phones, creating a mobile application that gives users access to real-time weather updates and forecasts has grown to be a vital resource. The Weather App is described in this project report. It is intended to provide customers with a streamlined and dependable experience while receiving weather information on their mobile devices.

1.2. Problem Definition

The weather app tackles the problem of providing accurate and up-to-date weather information to users across different locations. It overcomes challenges such as aggregating data from reliable sources, ensuring real-time updates, accurately determining user location, offering a user-friendly interface, maintaining forecast accuracy and reliability, allowing personalization and customization options, supporting multiple languages, optimizing battery efficiency, and ensuring accessibility. By addressing these challenges, the app aims to deliver a seamless and reliable weather experience, empowering users with the information they need to make informed decisions based on current and forecasted weather conditions.

1.3. Objective

- Users can get real-time information about current weather conditions, temperature, humidity, wind speed, precipitation, and other relevant data.
- This helps users plan their daily activities, such as deciding what to wear, whether to carry an umbrella, or scheduling outdoor events based on the weather conditions.Weather apps can also serve as a crucial tool for notifying users about severe weather conditions and warnings.

CHAPTER 2: SOFTWARE REQUIREMENTS SPECIFICATIONS

2.1. Hardware Requirements

- Processor - Intel 486/Pentium processor or better

- Processor Speed - 500 MHz or above

- Hard Disk - 10GB(approx.)

- RAM - 512MB or above

- Storage Space - Approx. 2MB

2.2. Software Requirements

- Programming Languages: JAVA,XML

- Api: Open Weather Api

- Operating System: windows 10

- IDE: Android Studio

- Design:Figma

CHAPTER 3: IMPLEMENTATION

1. The weather app used offers the local area's current weather conditions.

2. Using the open weather map api, the weather information is retrieved here.

3. Using the api key, a request for the weather information and the name of the city is sent, and in response, the json file is sent.

4. Include in the AndroidManifest.xml file a declaration of the appropriate permissions.To transmits and receive data, this api needs internet access.

5. Use a json parser to analyze the json response that you obtained from the weather api.

6. **WelcomePage**: A welcome page was designed in XML,featuring a search temperature button.Clicking on the button triggers an event to navigate to the main page. There is a text view where we need to enter the city name.

7.**Main Page**:The user is given all the information on a certain city that he requires on the home page. Current time and date,meteorological information. Includinglowestand maximum temperatures.Contains five buttons that provide the sunrise and sunset times for certain cities,along with wind speed, pressure, and humidity information.

8.Extract pertinent information (temperature, weather).

CHAPTER 4: RESULTS

Welcome to our weather app! Enter your city to get accurate temperature updates. Simply type in your location and hit the search button to find the current weather conditions. Stay informed and prepared with our easy-to-use mobile application.
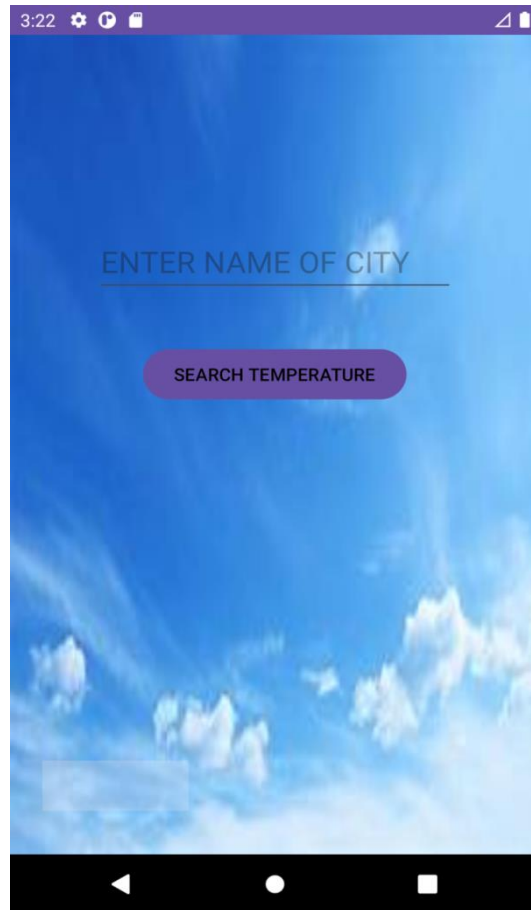

Fig 3.1 Home Screen

Get real-time temperature updates for your city. Enter your location and click the search button to find the current weather conditions instantly. Stay informed about the temperature wherever you go with our weather app.
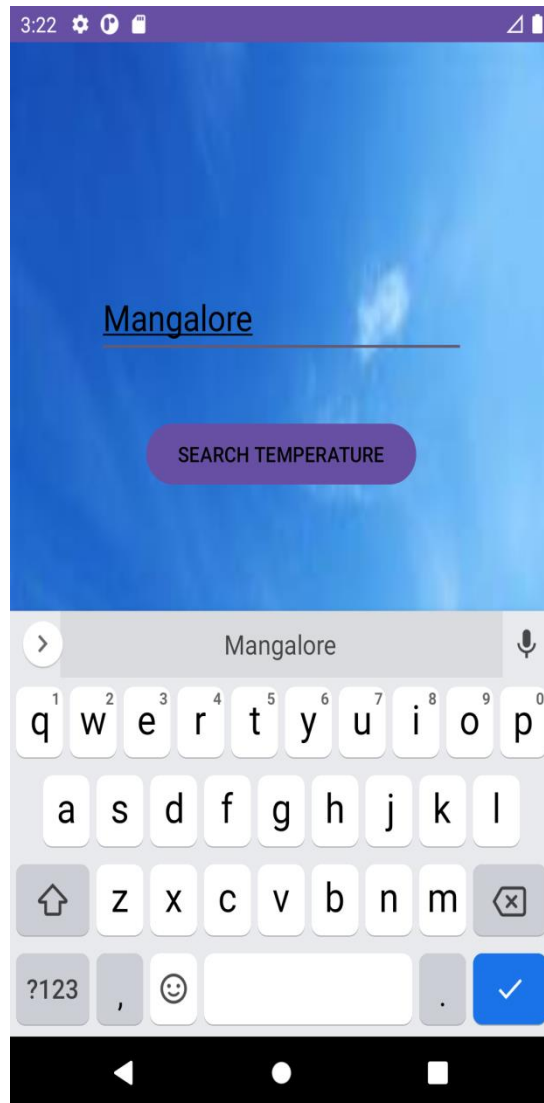

Fig.3.2 Enter the city in the text view

The page is currently loading as we gather the necessary data. During this time, the page is loading to provide you with accurate and current temperature information.
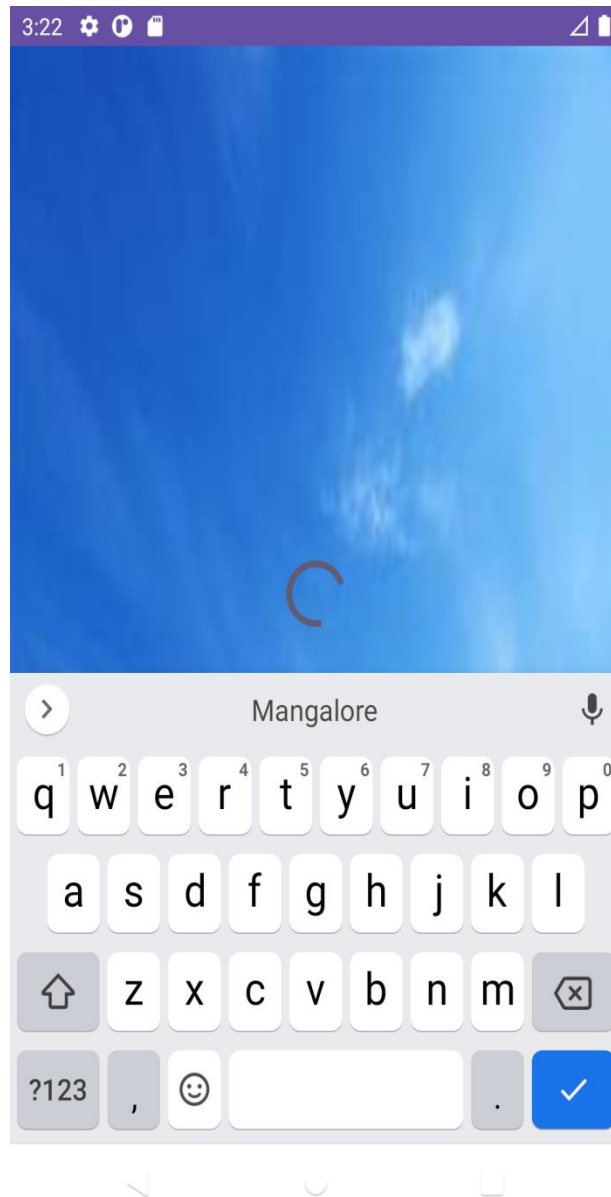

Fig 3.3 Loading Screen

Min Temp: This refers to the minimum temperature recorded for the location .typically

Measure in Celsius or Kelvin.

Max Temp: This indicates the maximum temperature recorded for the location. Usually measured in Celsius or Kelvin.

Wind: The wind parameter includes information about the wind speed the value"6.17"

Represents wind speed in Mangalore, measure in meter per second or other unit which is specified in the API request

Pressure: the pressure parameter represents the atmospheric pressure at the location. the value "1008"represents the pressure in Mangalore, typically measured in hectopascals (hPa) or mill bars

Humidity: The humidity parameter indicates the amount of moisture or water vapor present in the air. The value "74" represents the humidity level as percentage, indicating that the air is 74% saturated with water vapor

Sunrise:It will indicate when sunrise in the user's selected city will occur.

Sunset: It will indicate when sunset in the user's selected city will occur.

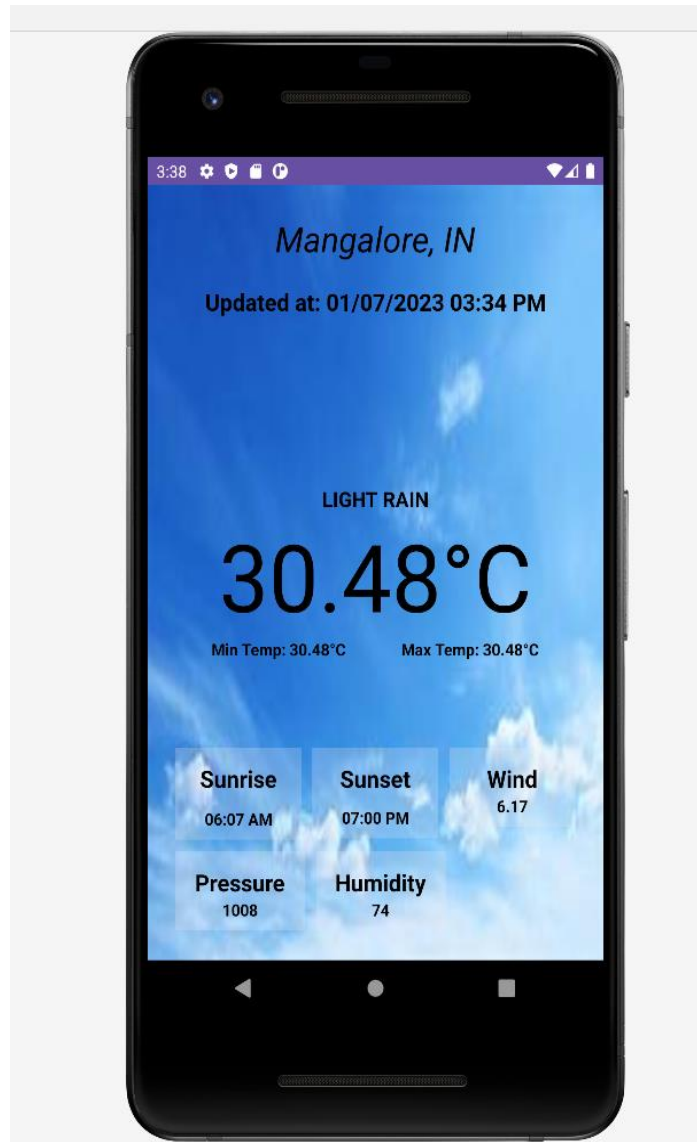**Updated time:** It will display the date and time when the local weather is updated.

Fig 3.4 Main Screen

CHAPTER 5: CONCLUSION AND FUTURE WORK

Conclusion:

In conclusion, the development of a weather app in the mobile application project has proved to be a valuable and impactful endeavor. The app's key features, including real-time weather updates, accurate forecasts, and user-friendly interface, provide users with a seamless and reliable weather tracking experience. The project successfully addressed the needs of users by delivering relevant and timely information, enhancing their daily planning and decision-making processes. The implementation of advanced technologies, such as API integrations and data analysis, ensured the app's efficiency and accuracy. Overall, the weather app project showcases the power of mobile application development in delivering practical and accessible solutions, demonstrating the potential to positively impact users' lives by providing them with valuable weather information on the go.

Future Works:

- **User Feedback and Reporting**: Enable users to provide feedback on the accuracy of weather data and report any discrepancies or issues they encounter.

- **Offline Mode**: Implement an offline mode that allows users to access basic weather information even when they have limited or no internet connectivity. This could include caching weather data, saving previously viewed forecasts, or providing essential weather alerts through SMS.

- **Advanced Forecasting Techniques**: Investigate and integrate advanced weather forecasting techniques, such as machine learning algorithms or AI models, to improve the accuracy of predictions. This could involve analyzing historical weather data, utilizing data from weather stations and sensors, or incorporating satellite imagery for more precise forecasts.

REFERENCES

1. Github (*https://www.github.com*)
2. Geeksforgeeks (*https://www.geeksforgeeks.org*)
3. Code Speedy (https://www.codespeedy.com)
4. Open Weather (https://www.openweathermap.org)