SUMMER INTERNSHIP / PROJECT REPORT
ON
“WEATHER WEB APPLICATION”

Submitted in Partial Fulfillment of the Requirement
for the award of Degree of
Bachelor of Technology
In
Computer Science & Technology

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Thank You
VANSH VADHERA
CSE(4th SEM)

CANDIDATE'S DECLARATION

I **MR VANSH VADHERA** Roll no **2K20CSUN01117 c**ertify that the Project Report / Dissertation entitled **"WEATHER WEB APPLICATION"** is done by me and it is an authentic work carried out by me at **"MANAV RACHNA UNIVERSITY".** The matter embodied in this report has not been submitted earlier for the award of a degree or diploma to the best of my knowledge and belief

Signature of the student:
Date:

CERTIFICATE

Certified that the Project Report/ Discretion entitled **"WEATHER WEB APPLICATION"** Is done by **MR VANSH VADHERA** Roll no **2K20CSUN01117** is completed under my guidance

Signature of the Guide:
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CONTENTS

1. ABSTRACT

Climate estimating is the application of science and innovation to anticipate the state of the environment of a given area
Humans have attempted to predict the weather informally since the 19th-century Ancient weather forecasting method usually relied on the observed pattern of events also termed pattern recognition, For example, it might be observed that if the sunset was particularly red the following day often brought Fairweather And if it is cloudy in the sky then it will bring rain, however, not all of these predictions prove reliable

Here This system will predict the weather based on parameters such as temperature, humidity and wind. The application will take the user's current location and will predict the seven days' weather according to the present humidity, temperature, wind speed and from previous data in the database There are a variety of end-users to the weather forecast. Weather warnings are important forecasts because they are used to protect life and property. Forecast based on temperature and precipitation is important to agriculture and therefore to trade with within communities.

2. PURPOSE

The reason for creating a climate web application is to bring the information within the requirements of taking data around climate. Another reason for creating this application is to produce the report automatically almost end of the weather. The following is a list of various reasons why weather forecast is important

1. Helps people prepare for how to dress(warm weather, cold weather)
2. Helps business and people plan for power production and how much power to use(power companies)
3. Helps people to prepare for outdoor activities
4. Help people with health-related issues to plan for day
5. Help farmers and gardeners plan for crop irritation and protection

3. SCOPE

The project's scope is the system on which the software is installed, i.e. the project is designed as a web application that will run on a certain system. However, the project can be updated in the future to run online. Another reason for creating this application is to automatically generate reports at the conclusion of the session, in the middle of the session, or in the middle of the session as needed.

4. PROPOSED SYSTEM

User has to provide the location access to the application after that the system will take this parameter to get the data from the OpenWeatherMap database and shows the next seven days' weather to the user. The weather forecast system takes parameters such as temperature, humidity, and wind and will forecast weather based on that. This prediction will prove reliable

5. REQUIREMENTS

Hardware/ Software	Hardware/Software elements	Specification/version
Hardware	Processor	i3
Hardware	RAM	2GB
Hardware	Hard Disk	100GB
Hardware	WIFI	50MBs
Software	Operating System	Windows, Linux,macOS
Software	Browser	Google Chrome, Firefox

6. USER INTERFACE DESIGN

User interface design for machines and software, such as computers, household appliances, mobile devices, and other electronic devices, with the goal of improving the user experience. User interface design aims to make user interaction as easy and efficient as feasible. in terms of achieving user objectives (user-centred design).
Good user interface design makes it easier to complete the work at hand without attracting undue attention to it. Graphic design and typography are used to promote the interface's usability, affecting how users complete specific interactions and boosting the design's aesthetic appeal; design aesthetics may increase or detract from users' ability to use the interface's functionalities. To build a system that is not only operational but also accessible and adaptive to changing user needs, the design process must balance technical functionality and aesthetic features (e.g., mental model). Interface design is used in a variety of projects ranging from computer systems to automobiles to commercial planes; all of these projects contain many of the same basic human interactions while also requiring some specific skills and knowledge. As a result, designers tend to concentrate on particular types of projects and develop talents in those areas, whether it's software design, user research, web design, or industrial design.

7. IMPLEMENTATION AND TESTING

A software system test plan is a document that outlines the goals, scope, methodology, and focus of a software testing project. The process of creating a test plan is a common method to think about the efforts required to validate a software product's acceptance. The entire text will explain the "WHY" and "HOW" of product validation to persons who aren't part of the test group. It should be comprehensive enough to be valuable, but not so comprehensive that no one outside the test group reads it.

7.1 Introduction

Testing is the process of putting a system through its paces in order to uncover flaws. Testing improves the integrity of a system by finding design flaws and system problems. The goal of testing is to find places that are prone to errors. This aids in the prevention of system errors. Testing is also beneficial. By adhering to the user's criteria, you can add value to the product. The fundamental goal of testing is to find faults and regions of a system that are prone to errors. Testing has to be done. through careful planning, A partially tested system is used to detect mistakes and sections of the system that are prone to errors. Testing should be meticulously organised. A system that has been partially tested is just as terrible as one that has not been tested at all.

7.2 Objectives of Testing

Our test plan's goal is to detect and report as many flaws as possible in order to improve the program's integrity. We will use a wide range of tests to achieve our goal, despite the fact that thorough testing is not practical. Our user interface for accessing these services is simple and intuitive. The app will only be used for demonstration purposes, however, We'd like to make sure it can run on a range of platforms with minimal impact.

7.3 Testing Steps

Low-level tests that verify that a tiny source code segment has been correctly implemented, as well as high-level tests that validate important system functionalities against client requirements, must be included in a software testing plan. A strategy must provide direction for the implementation. For the manager, there are a series of milestones and a practitioner. Because the test strategy's steps take place in sequential order, When deadline pressure begins to mount, progress must be quantifiable and issues must be addressed. as soon as is possible The approaches for the following testing are well-known, and the same procedure is used. During the testing phase of this project

7.4 Unit Testing

The smallest unit of software design, the software component or module is the subject of unit testing. The white-box approach is used in the unit test. Every module of the Weather Application is subjected to unit testing. The data is stored by providing accurate geolocation input to the system.

7.5 Integration Testing

Data can be lost when moving from one interface to another. One module may have a negative impact on another, and sub-functions may not be integrated in the right way in major functions when combined. Integration testing is a method of building a program's structure while also testing it. Performing tests in order to find flaws in the interface.

7.6 Performance Testing

It is used to evaluate software's run-time performance in the context of a larger system. Performance testing is carried out at every stage of the testing procedure. White-box tests can be used to analyse the performance of specific modules even at the unit level. conducted. This project reduces the number of codes in the attendance table. It will quickly generate a report. There is no need to waste time waiting for results. The result will appear in a few milliseconds if the data is correct. We just utilised a little portion of our system's RAM. Automatically, access to software is denied. Obtain authorization from the user and access to more applications

7.7 White Box Testing

The user interface is not used in white box testing. At the code level, inputs and outputs are evaluated and the results are compared to specifications. This method of testing ignores the function of the programme under test and focuses solely on its code and structure. An example of a test designer must create situations that not only cause each condition to take on all possible values at the same time but also cause each condition to take on all possible values at the same time. at least once, but this requires that each such condition be executed at least once.

7.8 System Testing

The goals of system testing are to detect faults that can only be exposed by testing the entire integrated system or some major part of it. Generally, system testing is mainly concerned with areas such as performance, security, validation, load/stress, and configuration sensitivity

7.9 Output Testing

Following validation testing, the proposed system's output must be tested, as no system can be helpful if it does not produce the required output in a certain format. The screen output format is verified to be correct. The format was created during the system development phase. suited to the requirements of the user The output is as stated for the hardcopy as well. the user's requirements, As a result, output testing did not result in any system correction.

8. DESIGN

8.1 Algorithms

Linear Regression:

Module-1: Data gathering and pre-processing.

Module-2: Applying Algorithm for prediction

8.2 Data Set

The dataset is a public weather dataset from Austin, Texas available on Kaggle, austin_weather.csv

Columns:

Date-

The date of the collection (YYYY-MM-DD)

TempHighF-

High temperature, in degrees Fahrenheit

TempLowF-

Low temperature, in degrees Fahrenheit

HumidityAvgPercent-

Average humidity, as a percentage

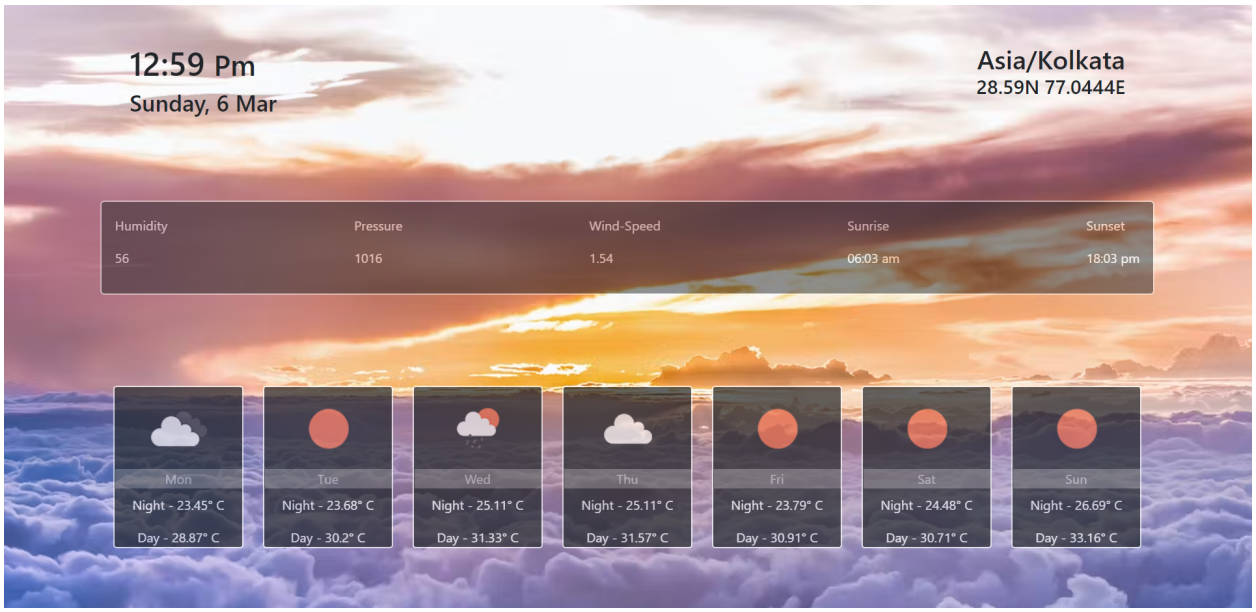
Average sea level pressure, in inches of mercury

SeaLevelPressureLowInches-

WindAvgMPH-

Average wind speed, in miles per hour

9. Screen Short



(SCREEN SHORT OF APPLICATION)