

PROJECT BASED REPORT

On

Weather Forecasting

ABSTRACT

Weather forecasting is the application of science and technology to predict the state of the atmosphere for a given location. Ancient weather forecasting methods usually relied on observed patterns of events, also termed pattern recognition. For example, it might be observed that if the sunset was particularly red, the following day often brought fair weather. However, not all of these predictions prove reliable.

Here this system will predict weather based on parameters such as temperature, humidity and wind. User will enter current temperature; humidity and wind, System will take this parameter and will predict weather(rainfall in inches) from previous data in database(dataset). The role of the admin is to add previous weather data in database, so that system will calculate weather(estimated rainfall in inches) based on these data. Weather forecasting system takes parameters such as temperature, humidity, and wind and will forecast weather based on previous record therefore this prediction will prove reliable. This system can be used in Air Traffic, Marine, Agriculture, Forestry, Military, and Navy etc.

1.INTRODUCTION

- **Data Warehousing**

Data Warehouse is electronic storage of a large amount of information by a business which is designed for query and analysis instead of transaction processing. It is a process of transforming data into information and making it available to users for analysis.

- **Data Mining**

Data mining is looking for hidden, valid, and potentially useful patterns in huge data sets. Data Mining is all about discovering unsuspected/ previously unknown relationships amongst the data. It is a multi-disciplinary skill that uses machine learning, statistics, AI and database technology.

1.1. Introduction

Rainfall Prediction is the application of science and technology to predict the amount of rainfall over a region. It is important to exactly determine the rainfall for effective use of water resources, crop productivity and pre-planning of water structures.

In this project, we used Linear Regression to predict the amount of rainfall. Linear Regression tells us how many inches of rainfall we can expect.

1.2 Problem Definition

It is important to exactly determine the rainfall for effective use of water resources, crop productivity and pre-planning of water structures.

1.3 Scope

It tells us how many inches of rainfall we can expect.

1.4 Purpose

There are several reasons why weather forecasts are important. They would certainly be missed if they were not there. It is a product of science that impacts the lives of many people. The following is a list of various reasons why weather forecasts are important:

1. Helps people prepare for how to dress (i.e. warm weather, cold weather, windy weather, rainy weather)
2. Helps businesses and people plan for power production and how much power to use (i.e. power companies, where to set thermostat)
3. Helps people prepare if they need to take extra gear to prepare for the weather (i.e. umbrella, rain coat, sun screen)
4. Helps people plan outdoor activities (i.e. to see if rain/storms/cold weather will impact outdoor event)
5. Helps curious people to know what sort of weather can be expected (i.e. a snow on the way, severe storms)
6. Helps businesses plan for transportation hazards that can result from the weather (i.e. fog, snow, ice, storms, clouds as it relates to driving and flying for example)
7. Helps people with health related issues to plan the day (i.e. allergies, asthma, heat stress)
8. Helps businesses and people plan for severe weather and other weather hazards (lightning, hail, tornadoes, hurricanes, ice storms)
9. Helps farmers and gardeners plan for crop irrigation and protection (irrigation scheduling, freeze protection)

1.5 Problem and Existing Technology

The traditional forecast process employed by most NMHSs involves forecasters producing text-based, sensible, weather-element forecast products (e.g. maximum/minimum temperature, cloud cover) using numerical weather prediction (NWP) output as guidance. The process is typically schedule-driven, product-oriented and labour-intensive. Over the last decade, technological advances and scientific breakthroughs have allowed NMHSs' hydrometeorological forecasts and warnings to become much more specific and accurate.

As computer technology and high-speed dissemination systems evolved (e.g. Internet), National Weather Service (NWS) customers/partners were demanding detailed forecasts in gridded, digital and graphic formats. Traditional NWS text forecast products limit the amount of additional information that can be conveyed to the user community. The concept of digital database forecasting provides the capability to meet customer/partner demands for more accurate, detailed hydrometeorological forecasts. Digital database forecasting also offers one of the most exciting opportunities to integrate PWS forecast dissemination and service delivery, which most effectively serves the user community.

1.6 Proposed System

User will enter current temperature; humidity and wind, System will take this parameter and will predict weather from previous data in database. The role of the admin is to add previous weather data in database, so that system will calculate weather based on these data. Weather forecasting system takes parameters such as temperature, humidity, and wind and will forecast weather based on previous record therefore this prediction will prove reliable.

2.REQUIREMENTS

2.1. Platform Requirements

Hardware/Software	Hardware / Software element	Specification /version
Hardware	Processor	i3
	RAM	2GB
	Hard Disk	250GB
Software	Andriod Studio	Kotlin

5.CONCLUSION

We successfully predicted the rainfall using the linear regression but here this is not very accurate only some times any way it depends upon the climate changes to season to season. Here we are taking only summer season weather data set it only useful to predict rainfall in summer season.