SYNOPSIS ON "**WEATHER WEB APPLICATION**"

SUBMITTED

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

BACHELOR OF COMPUTER APPLICATION

By

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To The

FACULTY OF COMPUTER SCIENCE & ENGINEERING
DEPARTMENT

DR. B.R. AMBEDKAR UNIVERSITY, AGRA

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SYNOPSIS APPROVAL

The Synopsis titled, "**WeatherWeb Application**" by "**Ajay Kumar (2010915011002)**", "**Bhupendra Sharma (2010915011007**)", and "**Ayush Sharma (2010915011005)"** has been approved for the degree of Bachelor of Computer Application.

Signature: ……
Project guide

Signature: ……
H.O.D, CSE

Certificate

We Hereby certify that the work which is presented in the BCA major project synopsis entitled "Weather Web Application" in partial fulfillment of the requirements for the award of the degree.**(BACHELOR OF COMPUTER APPLICATION)** and submitted to the department of **CSE** of **INSTITUTON OF TECHNOLOGY AND MANAGEMENT ALIGARH(U.P)** is an authentic record of our work carried out during a period under supervision of Mr. **Ankur Kumar Varshney** the matter presented in this synopsis has the been submitted by us for the award of any other degree elsewhere.

Signature of Candidates

AJAY KUMAR
BHUPENDRA SHARMA
AYUSH SHARMA

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Date **Signature of project supervisor**

ABSTRACT

Weather forecasting is the prediction of the state of the atmosphere for a given location using the application of science and technology. This includes temperature, rain, cloudiness, wind speed, and humidity. Weather warnings are a special kind of short-range forecast carried out for the protection of human life. Weather warnings are issued by the governments throughout the world for all kinds of threatening weather events including tropical storms and tropical cyclones depending upon the location. The forecast may be short-range or Long-range. It is a very interesting and challenging task. This report provides a basic understanding of the purpose and scope of weather forecasts, the basic principles and the general models developed for forecasting. In addition to predictions of atmospheric phenomena themselves, weather forecasting includes predictions of changes on the Earth's surface climate. These changes are caused by atmospheric conditions like snow and ice cover, storm tides, and floods. The basis for weather prediction started with the theories of the ancient Greek philosophers and continued with Renaissance scientists. The basis for weather prediction started with the theories of the ancient Greek philosophers and continued with Renaissance scientists. It was followed by the scientific revolution of the 17th and 18th centuries. The theoretical models of 20th-and 21st-century atmospheric scientists and meteorologists helped for the betterment in applications. The so-called synoptic weather map came to be the principal tool of 19th-century meteorologists.

LIST OF FIGURES

CONTEXT

INTRODUCTION

Weather forecasting is the prediction of the state of the atmosphere for a given location using the application of science and technology. This includes temperature, rain, cloudiness, wind speed, and humidity. Weather warnings are a special kind of short-range forecast carried out for the protection of human life.

So we are creating this project in **MERN (MongoDB, ExpressJs, ReactJs, NodeJs)** technology. 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.

REQUIREMENT GATHERING AND ANALYSIS

Functional Requirements

Weather radar: Weather radar is a tool used to measure precipitation, incoming storms, and other severe weather.

Weather balloons: Weather balloons are used to measure temperature, wind speed and direction, and air pressure in the layers of the troposphere.

Barometer: A barometer is a forecasting tool used to measure atmospheric pressure in a certain environment.

Thermometers: Thermometers measure the temperature in a given location.

Satellite and weather data: Satellite and weather data observe cloud patterns around the globe. There are three types of satellites which meteorologists use-

- **Polar-orbiting satellites**
- **Geostationary satellites**
- **Deep space satellites**

Weather stations: Weather stations observe temperature, humidity, barometric pressure, wind speed and direction, and rainfall.

IOT sensors: IOT- enabled technology measures weather factors like temperature, moisture, and pressure.

Weather forecasting models: Data sets collected need to be inputted into a weather forecasting model that can understand how various inputs can affect the outcome of different weather events.

Analysis of weather patterns and data: Analysis of weather patterns involves taking this data and using forecasting models to determine future trends, forecast the temperature, or determine the likelihood of a severe weather event, such as a a blizzard, flood, or hurricane.

IBM GRAF: IBM GRAF is the first hourly-updating weather system that can predict something as small as a thunderstorm virtually anywhere on the planet. With far greater accuracy than traditional weather models (updating every hour versus 6-12 hours), the IBM GRAF weather model uses high-resolution data and the latest in weather graphics and technology to predict weather activity around the globe.

Security Requirements

A security requirement is a statement of needed security functionality that ensures one of many different security properties of software is being satisfied. Security requirements are derived from industry standards, applicable laws, and a history of past vulnerabilities. Security requirements define new features or additions to existing features to solve a specific security problem or eliminate a potential vulnerability.

Security requirements provide a foundation of vetted security functionality for an application. Instead of creating a custom approach to security for every application, standard security requirements allow developers to reuse the definition of security controls and best practices. Those same vetted security requirements provide solutions for security issues that have occurred in the past. Requirements exist to prevent the repeat of past security failures.

- **Authenticity**
- **Registration**
- **Integrity**
- **Secrecy/Privacy**
- **Availability**
- **System Accountability**
- **Simplicity**
- **Testing and Certification**
- **Distribution of Authority**

METHODOLOGY USED

Hardware Requirements

- Window Devices above for Window Xp.
- Processor minimum 2.2 GHZ or more.
- Ethernet Connection(LAN,WAN,MAN,PAN), or any wireless network.
- Hard Derive minimum 16GB Recommended 64 or more.
- Sound Card/Speaker.

Software Requirements

- Operating System: Window7, Window8, Window10, and Also support Window11.
- Database Server: MongoDB and MongoDB compass.
- Client Operating System: Window opreration System, IOS

TOOL'S AND APPLICATION

Languages:-

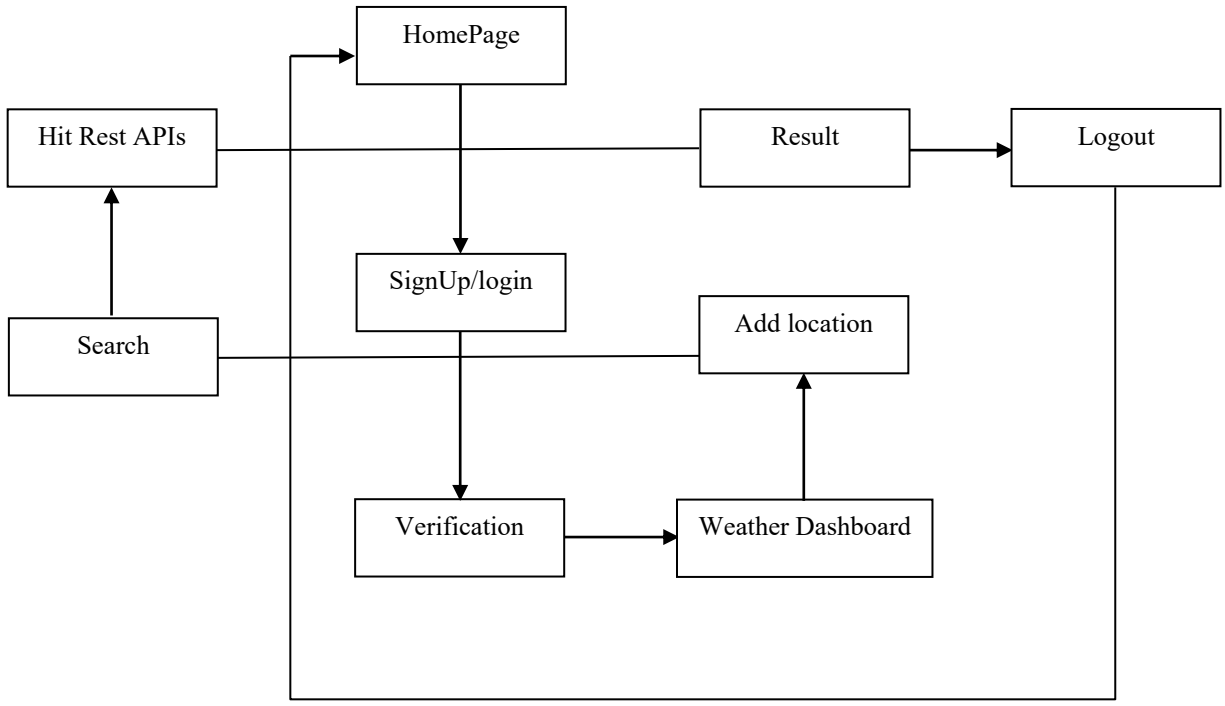
- Front-end: HTML, CSS, JavaScript, ReactJs.
- Back-end: JavaScript, ExpressJs, Nodejs.
- Database: MongoDB, Mongoose, MongoDB Compass.

Tools:-

- BycryptHase, Chalk, Validator's(hbs), jsonwebtoken(jwt)

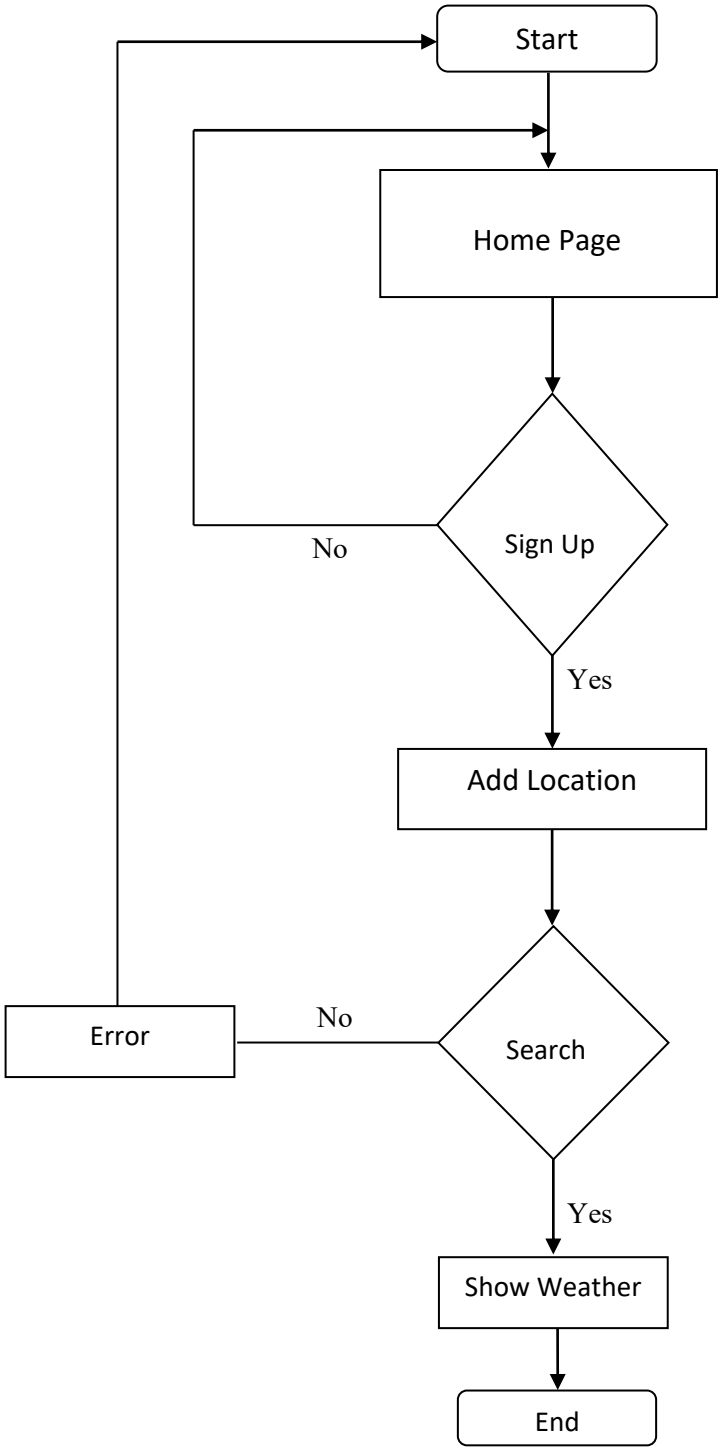
DESIGN

Diagram:-



WeatherWeb Application component Diagram

Flowchart:-


Start
Home Page
Sign Up
No
Yes
Add Location
Search
No
Error
Yes
Show Weather
End

REFERENCE

- **https://github.com/android**
- **https://mongodb.com**
- **https://npmjs.com**
- **https://mogoose.com**
- **https://w3schools.com**
- **https://acuweather.com**
- **https://scribd.com/documentation**