A Mini Project Synopsis on

Real Time Crop Recommendation System

T.E. - I.T Engineering

Submitted By

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CERTIFICATE

This to certify that the Mini Project report on **Real Time Crop Recommendation System** has been submitted by Anagha Rai (19104030), Ishika Sharma(19104061) and Ruta Mhaskar (19104013) who are Bonafide students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in **Information Technology**, during the academic year **2021-2022** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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Guide

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Chapter 1

Introduction:

Farming is one of the major sectors that influences a country's economic growth.
In countries like India, the majority of the population is dependent on agriculture for their livelihood. Many new technologies, such as Machine Learning ,are being implemented into agriculture so that it is easier for farmers to grow and maximize their yield.
In our project, we are implementing a Crop Recommendation System. In this application, the user can provide the soil data from their side and the application will predict which crop should the user grow.
The environmental data that is gathered by remote sensors are processed by algorithms and statistical data which will be understood and helpful to farmers for decision making and keep track of their farms. The more inputs and statistical data collected, and higher the algorithmic rule is at predicting the outcomes. And the aim is that farmers will use these technologies to attain their goal of improved harvest by creating better selections within the field. By implementing the system of temperature, soil hydrogen ion concentration and soil wetness detection, the information captured are processed with an explicit algorithmic rule and passed to a centralized database that is connected to different modules of the research, so the main system will predict the most effective crop kind that the farmer should grow to require the most outcome of the crop kind that is farmed in a home garden or the respectable land area.

Purpose:

The purpose of this project is to help farmers to do the right crop production in that particular region by predicting from the analysis about the crops to be yield in specific regions.

Objectives:

- To give right knowledge to the users about which crop to sow in their field based on the soil data.
- To recommend optimum crops to be cultivated by farmers based on several parameters and help them make an informed decision before cultivation.
- To develop a user-friendly website.

1.3 Scope:

- Can be applied in real world
- Can be used by farmers to know the right type of crops to grow in their fields.
- Can become the go-to assistant that recommends the optimum crop for a soil type.
- Can be used to prevent any loss of crops.

Chapter2

Problem Definition:

- Problem Identified:
    - India is known as the land of farmers and agriculture is carried out over acres.
    - Most of the farmers lack information about the crops to be cultivated in different regions.
    - Hence they end up growing the wrong crop.
    - This results in mass deduction of food production.

  Solution Proposed:
    - As a solution to this problem, this project focuses on studying the soil type and other factors and suggesting the right crop for it.
    - The ML algorithm used here takes input from the user and displays the best crop match.

Chapter3

Solution Proposed:

This project focuses on studying the soil type and other factors and suggesting the right crop for it. Thus, helps in preventing the loss of crops and growth in production.

3.1 Features and Functionality:

1. Home Page

- The user can see the homepage of the website which includes the title of the website, aim of the website and about us description can be seen here.

2. Crop Page

- This page contains fields wherein the user has to input all the details that are been asked by the user such as nitrogen, phosphorus, potassium, temperature and rainfall of the area, pH value of soil and also state and city.
- After inputting all the values, the user has to click on the predict button in order to get the result.
- Result will be displayed on the new page.

Chapter4

Project Outcomes:

1. Can be helpful for the farmers to decide the crops to be cultivated in a particular region by using soil data.
2. Thus our work will help the farmers in sowing the right seed based on soil requirements to increase productivity and acquire profit.
3. The model which is trained with the training data set is tested with inputs from the user in our application.
4. The scripting done will respond to any test case predicting a crop. If the test case doesn't match any of the predictions then a try again output is generated.

Chapter5

Software Requirements:

The project is curated using the following -

- For Front-End: HTML, CSS, Bootstrap
- Framework: Flask
- Machine Learning

Chapter6

Project Design:

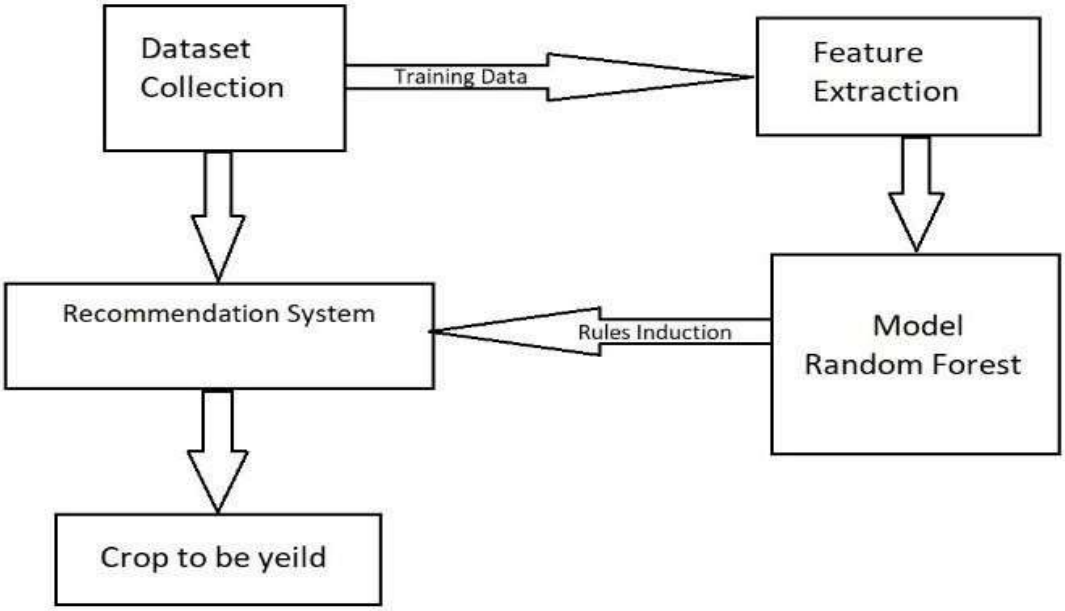

Figure 1.1: Working

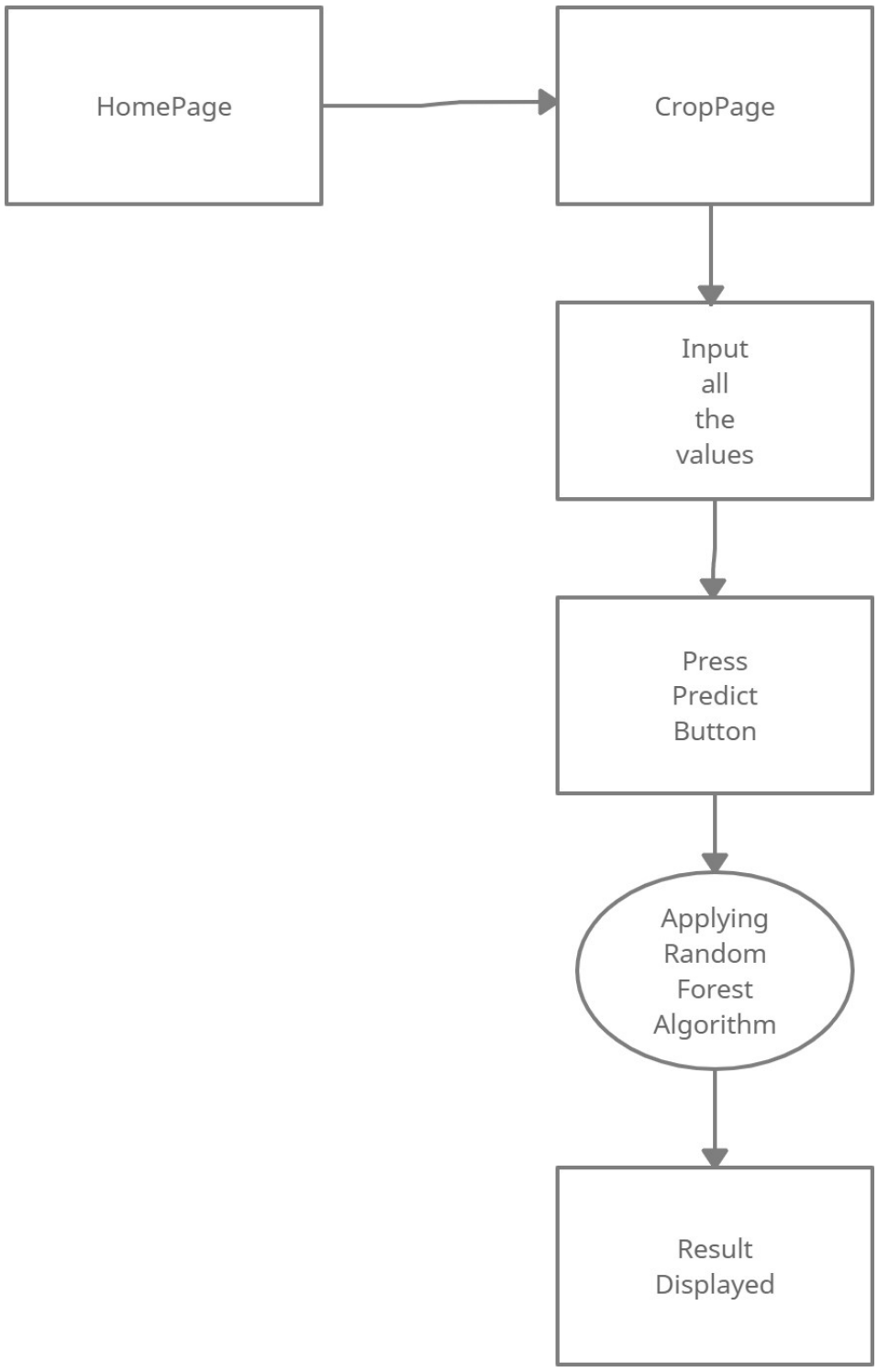

Figure 1.2: Website Flow

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Project Scheduling:

Sr. No	Group Member	Time duration	Work to be done
1	Ishika Sharma	1st week of January	Collected and imported the dataset
		2nd week of January	Designed and implemented html home page
2	Ruta Mhaskar	3rd week of January	Designed and implemented html crop page
3	Anagha Rai	By the end of march month	Applied ML algorithm to the dataset and checked connectivity of dataset with UI

Chapter8

Screenshots of Application:

Figure 2.1: Home Page

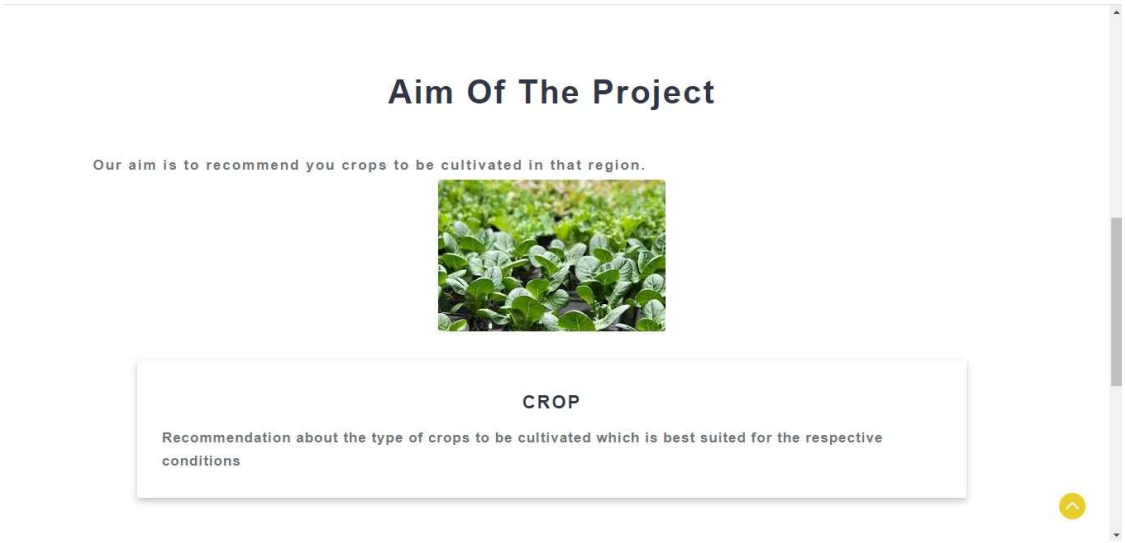

Figure 2.2: Home page

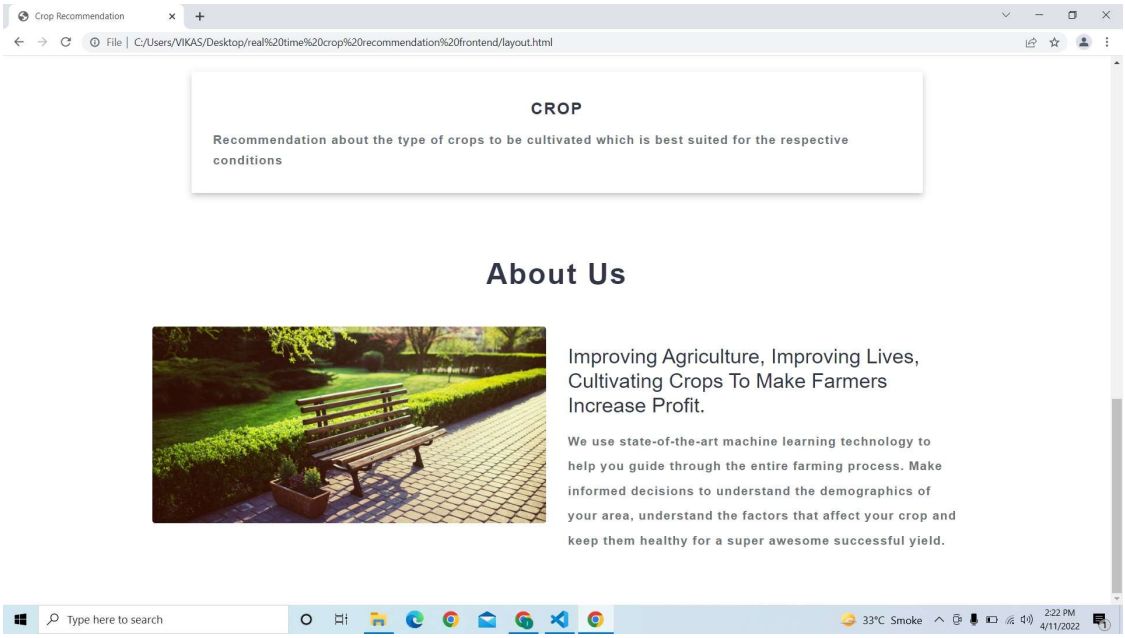

Figure 2.3: Home Page

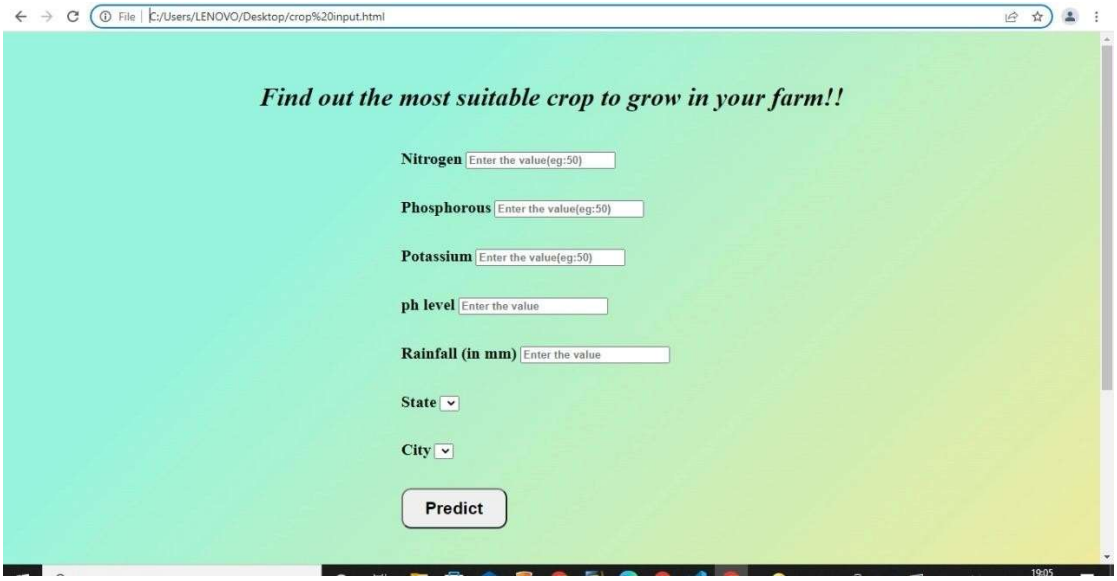

Figure 3.1: Crop Page

Chapter9

Conclusion:

In a modern environment with less knowledge of agriculture, it is important to have knowledge and an understanding of the factors that affect the cultivation before selecting any crop. From this system, these above-mentioned factors are automatically processed and select the crop type that has to be cultivated.

Reference:

1. https://www.kaggle.com/
2. https://www.geeksforgeeks.org/deploy-machine-learning-model-using-flask/
3. https://www.researchgate.net/publication/346627389_Crop_Recommendation_System

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