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A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE
(All Programs Accredited by NBA)
Department of Information Technology

Crops Guru: Crop Recommendation System

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Project Guide
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1.Introdution

The Problem we Identified is,

1.Farmers struggle to select optimal crops due to various factors such as availability, soil quality, weather conditions, and market demand

The Solution we proposed is,

2.Providing a platform that recommends the best crop for farmers based on their farmland's characteristics, historical weather patterns, and market demand.

2. Objectives

1. To Develop a database of crops and their properties.
2. To Create a user-friendly interface for inputting location, soil type, and other info.
3. To Provide personalized crop recommendations based on user input and crop database.
4. To Improve crop yields and reduce wastage by recommending suitable crops.
5. To Increase efficiency of farming process by reducing research time and effort.
6. To Enable farmers to make informed decisions about crop selection.

3. Scope

1.Crops Guru provides agriculture domain-based crop recommendations to farmers.

2.Useful for small and large-scale farmers seeking to optimize crop yields and reduce risk of crop failure.

3.Can also be used by researchers and policymakers for crop selection analysis and informed decisions.

4. Literature Survey

Title	Year	Technology Stack	Advantage	Limitation	URL
"Crop recommendation system using machine learning algorithms "	2018	Data mining, machine learning algorithms, Random Forest	Improves crop yields, reduces risk of crop failure	No information provided about scalability of project	Link
"Agricultural crop prediction using machine learning"	2020	Data preprocessing, k-nearest neighbor, decision trees, neural networks	Accurately predicts crop yields, helps farmers make informed decisions	Require Heavy infrastructure for running model	Link

5. Proposed System

1. User inputs soil data and relevant information
2. Machine learning algorithms analyze historical weather data to predict weather patterns.
3. The weather prediction algorithm uses Random Forest to split the dataset and provide results.
4. Application recommends suitable crops based on farmland characteristics, weather patterns, and market demand
5. System provides real-time market demand data for crops

6. Algorithm Used

The Random Forest algorithm is used to predict the best crop for a particular area based on the available soil and climate data in a particular region based on a dataset of soil samples with known characteristics..

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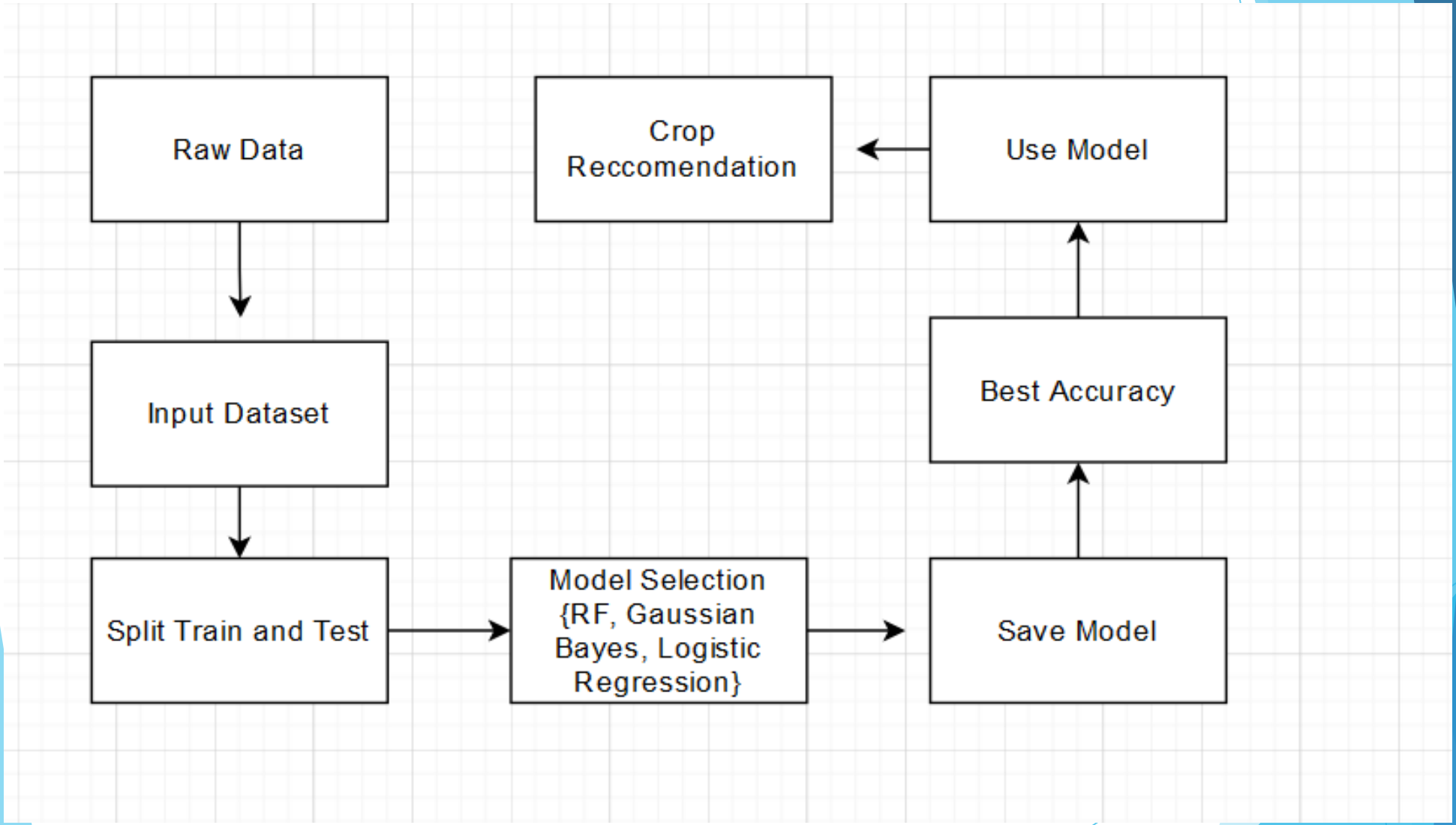
7. Outcome of Project

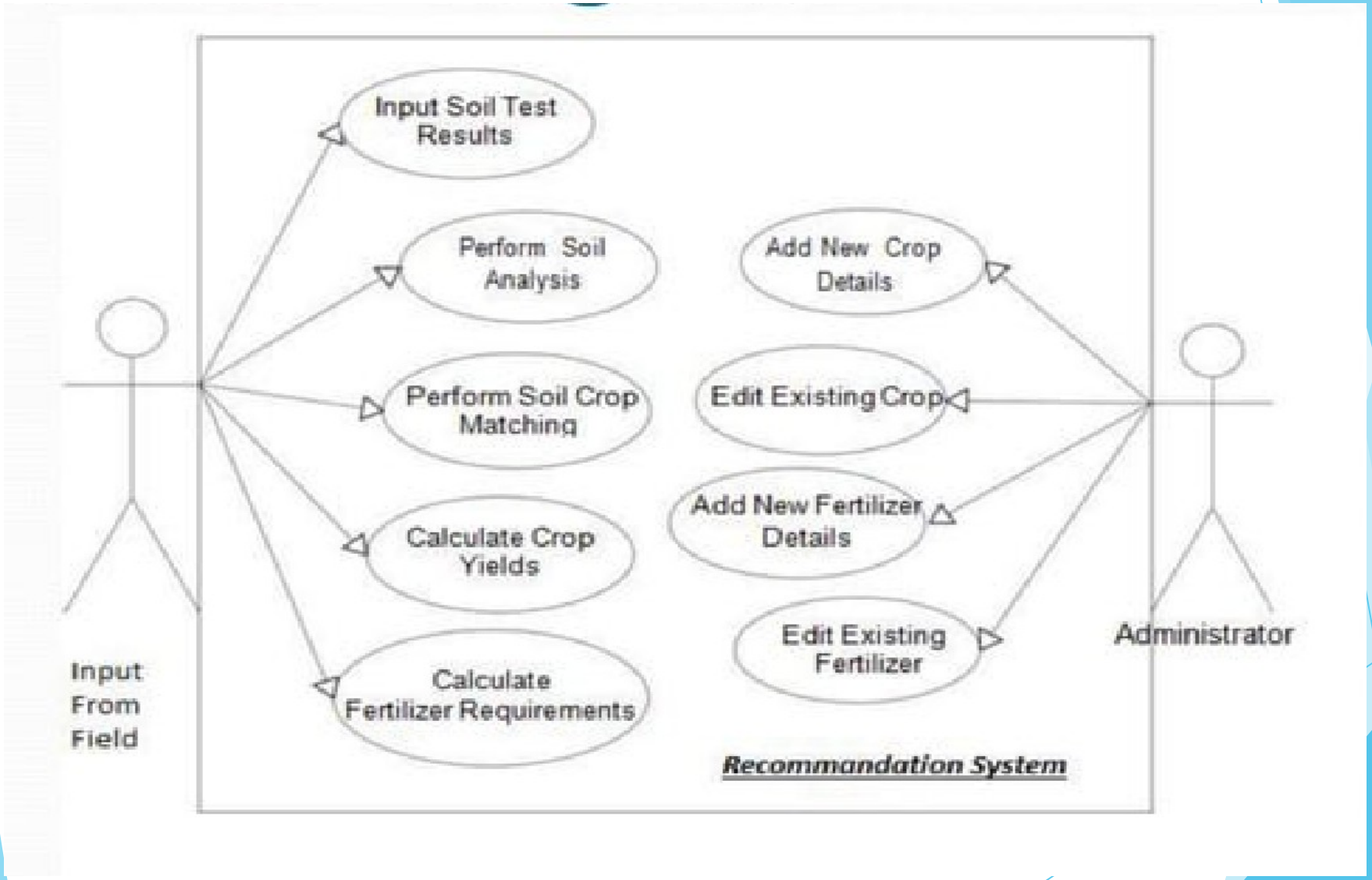
1. User Interface: A user-friendly interface that enables farmers to input their location, soil type, climate conditions, and other relevant data.

2. Crop Recommendation Report: A report that recommends a list of crops that are most suitable for a specific region based on the soil and climate analysis.

8. Block Diagram



9. Use Case/Data Flow Diagram



10. Technology Stack

1. Front-end:-

    1. Html
    2. Css

2. Back-end:-

    1. Framework:- Flask

Thank You...!!