# Group 2

# AGRICULTURAL DATA ANAYSIS

## Federal Institute Of Science And Technology

Group Members

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**Abstract**

In Agricultural sector where farmers and agribusinesses have to make innumerable decisions everyday and intricate compexities involves in the various factors influencing them.An essential issue for agricultural planning intention is the accurate yield estimation for the numerous crops involved in the planning.Data mining techniques are necessary approach for accomplising practical and effective solutions for this problem.In this project we are checking the various climate attributes in a particular place,the same is retrieved using openweathermap API.After retrieving the climate attributes then store the datas in a server.The importance of storing datas in the server is that of the use of datas for the future reference.

# Introduction

**T** oday, India ranks second worldwide in the farm output. Agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India. Agriculture is a unique business crop production which is dependent on many climate and economy factors. Some of the factors on which agriculture is dependent are soil, climate, cultivation, irrigation, fertilizers, temperature, rainfall, harvesting, pesticide weeds and other factors. Historical crop yield information is also important for supply chain operation of companies engaged in industries.There are 2 factors which are helpful for the farmers and the government in decision making namely:

a.It helps farmers in providing the historical crop yield record with a forecast reducing the risk management.

b.It helps the government in making crop insurance policies and policies for supply chain operation.

Data mining technique plays a vital role in the analysis of data. Data mining is the computing process of discovering patterns in large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics, and database system.

# Chapter 1

# Tasks

## 1.1 Task No:1

Weather Forcasting Application

### 1.1.1 Date of the task given:

17 August 2017

### 1.1.2 Objectives

- What is the main goal of this app? To predict the conditions of the atmosphere for a given location
- Is it track climatic conditions of any location? Using this app we can get the full atmospheric details of any place in this world
- How can we get the weather details of a particular location? We can connect our app with an OpenWeatherMap API

### 1.1.3 Algorithm

**Input:**

Enter the location for weather search

**Output:**

Display the temperature,humidity from Open-WeatherMap API

1. **Start**
2. **Set User permission to access internet**
3. **Create the Text field for entering the location**
4. **Create the Button for Search**
5. **Use an API for retrieving the weather details**
6. **Display the Weather details in report**
7. **Store the displayed details to the database**
8. **Stop.**

### 1.1.4 Task completed Date

**25th August 2017**

## 1.2 Task No:2

Saving displayed weather details of each place to a server

### 1.2.1 Date of task given:

25 August 2017

### 1.2.2 Objectives

- How the displayed data can be stored into a database?
- How the stored datas can be displayed on screen?

### 1.2.3 Algorithm :

**Input:**

Displayed data about the given city

**Output:**

Save the data displayed on the screen when enter the city name

**1. Start**
**2. Assign the data to dierent variables**
**3. Create the Button for save and menubox for save and display**
**4. Fetch the values and save the contents into a database using queries**
**5. Display the stored data by selecting view**
**6. Stop**

### 1.2.4 Task completed Date

**26th October 2017**

## 1.3 Task No:3

Rainfall Prediction Using Decision Tree Algorithm

### 1.3.1 Date of task given:

3rd October 2017

### 1.3.2 Objectives

- What is the main goal of this algorithm?
  To predict the conditions of the atmosphere for a given location
- Is it for classify the given dataset?
  Using this algorithm it can classify the given dataset into multiple class
- How can we classify?
  Can classify the datasets as moderate rainfall , medium and high rainfall loca- tions

### 1.3.3 Algorithm

**Input:**

Read the dataset for weather details

**Output:**

Classify the dataset using decision tree algorithm

1. **Start**
2. **Import the packages**
3. **Read the dataset**
4. **Split the dataset as train data and test data**
5. **Classify data to different classes**
6. **Repeatedly split datas until whole datas belong to a class**
7. **Stop**

# Chapter 2

# Algorithm

**Decision Tree Algorithm**

**D** ecision Tree algorithm belongs to the family of supervised learning algorithms. Unlike other supervised learning algorithms, decision tree algorithm can be used for solving regression and classification problems too.

The general motive of using Decision Tree is to create a training model which can use to predict class or value of target variables by learning decision rules inferred from prior data(training data).

The understanding level of Decision Trees algorithm is so easy compared with other classification algorithms. The decision tree algorithm tries to solve the problem, by using tree representation. Each internal node of the tree corresponds to an attribute, and each leaf node corresponds to a class label.

## 2.1 Why Decision Tree?

- Decision trees are powerful and popular tools for classification and prediction.
- Decision trees represent rules, which can be understood by humans and used in knowledge system such as database.

## 2.2 Strength of using Decision Tree

- perform classification without much computation.
- can handle continuous and categorical variables
- provide a clear indication of which fields are most important for prediction or classification

# Chapter 3

# Proof of Concept

As we know there are several applications availabe in mobile phones showing the current weather conditions.The weather conditions incuding the temperature, humidity, speed of wind etc...The limit is that it can only be used for showing the climatic conditions at that moment.In our Agricultural data analysis application we are saving the datas into a server so that it can be used for the future references.This datas are usefull when we want some crops to be cultivated in a particular region.According to farmers mindset he/she want his/her crop to be cultivated at the best time,so these datas can show how appropriate the present condition so as to get his crop at high yield.

# Conclusion

data mining techniques are implemented on the input data to assess the best performance yielding method.The present work used data mining technique such as Decision tree Algorithm.We are here predicting the rainfall that helps the farmers for cutivating their crops according to the type of the crop. The proposed work can also be extended to analyse the soil and other factors for the crop and to increase the crop production under the different climatic conditions.

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