

# AI Assisted Farming for Crop Recommendation & Farm Yield Prediction Application

## Introduction:

### **Overview**

Due to lack of awareness and predictive methods farmers could not make profitable yield with the cultivation land they have. And at the same time, the global population is growing and urbanization is continuing. Disposable income is rising, and consumption habits are changing. Farmers are under a lot of pressure to meet the increasing demand, and they need a way to increase productivity. Thirty years from now, there will be more to feed, and since the amount of fertile soil is limited, there will also be a need to move beyond traditional farming. We need to look for ways to help farmers minimize their risks, or at least make them more manageable. Implementing artificial intelligence in agriculture on a global scale is one of the most promising opportunities

### **Purpose**

AI powered web application to help farmers in identifying the right crop, right time to maximize their productivity, Quality and Yields. Digital Farming and Precision Agriculture practices will be used as input

temperature

humidity

rainfall

Soil nutrients(nitrogen ,potassium , phosphorous)

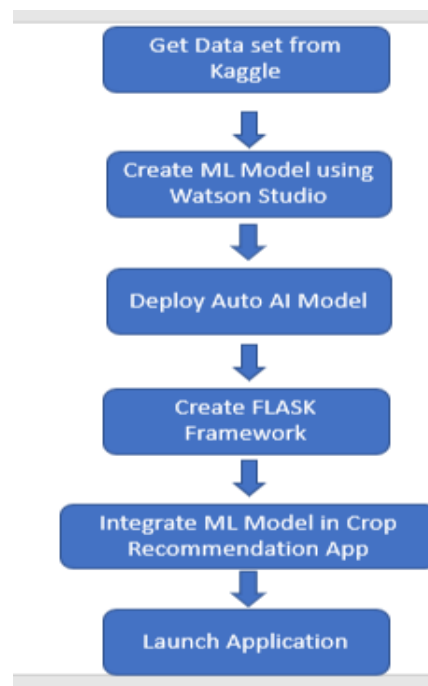
Develop a ML based Predictive model to forecast revenue and yield from the cultivated land

## EXPERIMENTAL INVESTIGATION:

### ***Watson Studio 20CUH:***

As Watson Studio only allows Lite users to use up to 20 capacity unit hours of CPU time per month, I had already exhausted the 20CUH in the first 3 days of testing and building the project. Thus I now have to improvise and output random crop samples in the web app as the Deployed Space does not run the model on a http request after exhausting the 20CUH

### Flowchart



## RESULT:

### ***Results Achieved***

Auto AI Model successfully built using given datasets

User interface created using flask framework

Platform is integrated with ML model

## User Interface Screen shots :

The screenshot displays a web browser window with the title 'FARM PREDICTION'. The address bar shows the URL '127.0.0.1:5000/crop\_prediction'. The browser's tab bar includes 'Student Dashboard' and 'Hack Challenge 2021'. The main content area features a blue gradient background. On the left, a grey box titled 'AI Powered CROP RECOMMENDATION' contains the following input fields:

- TEMPERATURE: Temperature(Celcius)
- HUMIDITY: Enter Humidity
- PH VALUE: PH value
- RAINFALL: Enter Rainfall amount
- NITROGEN: NITROGEN amount
- PHOSPHORUS: PHOSPHORUS amount
- POTASSIUM: POTASSIUM amount

A green button labeled 'PREDICT' is located at the bottom of the grey box. To the right of the input fields, there is a grey box with two labels: '-----PERFECT CROP-----' and '-----MARKET VALUE-----'.

## Sample Predicted Value:

Browser Tab: FARM PREDICTION

Address Bar: 127.0.0.1:5000/crop\_prediction?#

Page Title: Student Dashboard Hack Challenge 2021

### AI Powered CROP RECOMMENDATION

TEMPERATURE	27.23	HUMIDITY	82.72
PH VALUE	6.54	RAINFALL	202.93
NITROGEN	90	PHOSPHORUS	42
POTASSIUM	43		

**PREDICT**

-----PERFECT CROP-----

**RICE**

-----MARKET VALUE-----

**732.16**  
**INR/Quintal**

Windows Taskbar: Type here to search, 21:43, 31-08-2021