



# Basic Details of the Team and Problem Statement

**Ministry/Organization Name/Student Innovation:**

AICTE, MIC-Student Innovation

**PS Code: 1491**

**Problem Statement Title:** Student Innovation

**Team Name:** Cookie Session

**Team Leader Name:** Divya Darshana

**Institute Code (AISHE):** U-0522

**Institute Name:** Jaypee Institute of Information and Technology, Noida

**Theme Name:** Agriculture, FoodTech & Rural Development

# Idea/Approach Details

## Innovative AgTech WebApplication Solution:

### 1. Smart Crop Planner:

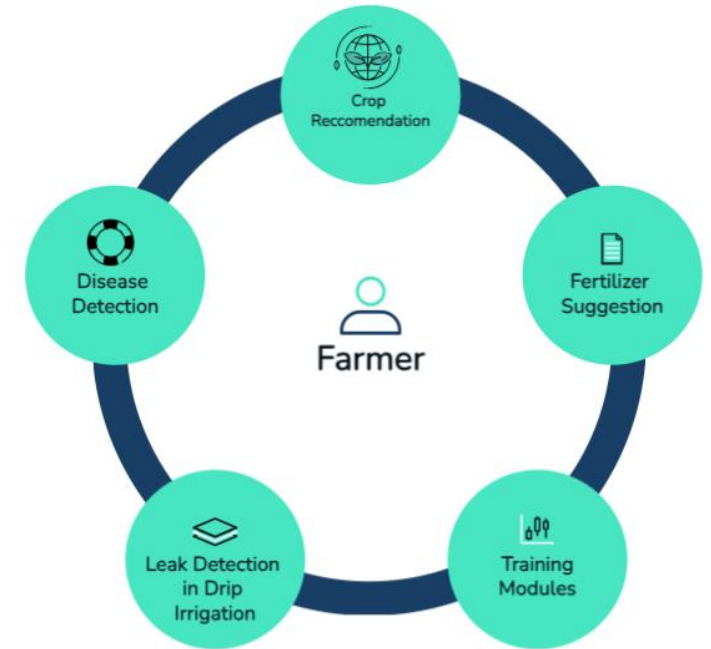
- Empower farmers with ML-driven recommendations for crop selection and fertilizer use, based on soil health, rainfall, and crop data.
- Boost yields while saving time and resources.

### 2. Instant Disease Diagnosis:

- Harness the power of deep learning to swiftly identify and combat plant diseases from pictures.
- A visual safeguard for crops, ensuring healthier harvests.

### 3. Leak-Busting Irrigation:

- Employ cutting-edge neural networks to detect leaks in large-scale drip irrigation systems.
- Prevent water waste, protect investments, and promote sustainable farming.



## Describe your Technology stack here:

- Python (for ML), TensorFlow, PyTorch, Scikit-learn, OpenCV, Cloud Computing (for scalability), Web Development (for user interfaces).

# Idea/Approach Details

## Describe your Use Cases here

1. Precision Farming Made Simple:
  - Our Crop Recommendation System transforms farmers into precision agriculturists. It takes the guesswork out of crop selection and fertilizer application, maximizing yield while minimizing costs. **No more trial and error – just smart decisions.**
2. Instant Plant Health Diagnosis:
  - Imagine a farmer's smartphone becoming a diagnostic tool. Our Plant Disease Identification Model scans images of crops and, in an instant, reveals the health of each plant. This means **early detection, faster response, and healthier harvests.**
3. Water Conservation Superhero:
  - Our Drip Irrigation Leak Detection Model is like a water-saving superhero for large-scale farms. It tirelessly monitors irrigation systems and swiftly detects leaks. It's the **guardian of resources, ensuring every drop is used efficiently.**
4. Sustainable Agriculture Champion:
  - In a world where sustainable farming is vital, our solution empowers farmers to make eco-friendly choices. It minimizes resource wastage, reduces chemical runoff, and promotes practices that benefit both the environment and their bottom line.

## Describe your Dependencies / Show stopper here

1. **Data Accessibility:** The solution relies heavily on access to accurate and up-to-date data, including soil conditions, historical rainfall, and plant disease databases. Without reliable data sources, the system's effectiveness would be compromised.
2. **Machine Learning Models:** The development and optimization of machine learning models for crop recommendation, disease identification, and leak detection are pivotal. Any delays or roadblocks in model training and validation could impede the solution's deployment.
3. **Hardware Infrastructure:** For real-time monitoring and image processing, adequate hardware infrastructure is essential. Dependence on hardware availability and performance is a critical factor.
4. **Integration and User Adoption:** The successful implementation of the solution depends on seamless integration into the existing agricultural practices and user adoption. Resistance to change or inadequate training could hinder its acceptance.

# Team Member Details

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## Team Leader Name: Divya Darshana

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): CSE

Year (I,II,III,IV): III

## Team Member 1 Name: Astha Mishra

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): CSE

Year (I,II,III,IV): III

## Team Member 2 Name: Ishita Bansal

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): CSE

Year (I,II,III,IV): III

## Team Member 3 Name: Sarthak Gupta

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): CSE

Year (I,II,III,IV): III

## Team Member 4 Name: Kanav Agarwal

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): CSE

Year (I,II,III,IV): III

## Team Member 5 Name: Suyash Rai

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): CSE

Year (I,II,III,IV): III