



# ARTEMIS HACKATHON 2026



## TITLE PAGE

- Problem Statement No – 01
- Problem Statement Title - Agriguard AI
- PS Category- Software
- Team Name – Falcon05



# PROBLEM STATEMENT



## **Problem:-**

- Farmers cannot easily identify plant diseases at early stages
- Lack of agricultural experts in rural areas
- Wrong pesticide usage increases cost and soil damage
- Crop loss reduces farmer income

## **Who faces this?**

- Small and medium farmers
- Rural agricultural communities

## **Current Challenges:-**

- Manual inspection
- Delayed diagnosis
- No instant expert guidance

## **Real-world relevance:-**

- India is agriculture dependent
- Early disease detection increases productivity
- Supports Digital India & Smart Farming



# PROPOSED SOLUTION (YOUR IDEA)



## **Concept:-**

- An AI-powered web application that:
- Detects plant diseases using leaf images
- Provides suitable treatment suggestions instantly

## **How it works (High Level):-**

- Farmer uploads plant leaf image
- ML model predicts disease
- System shows:
- Disease name
- Confidence percentage
- Suggested treatment

## **Main Features:-**

- Image-based disease detection
- Instant AI prediction
- Simple web interface
- Treatment & pesticide suggestion
- Works on mobile browser

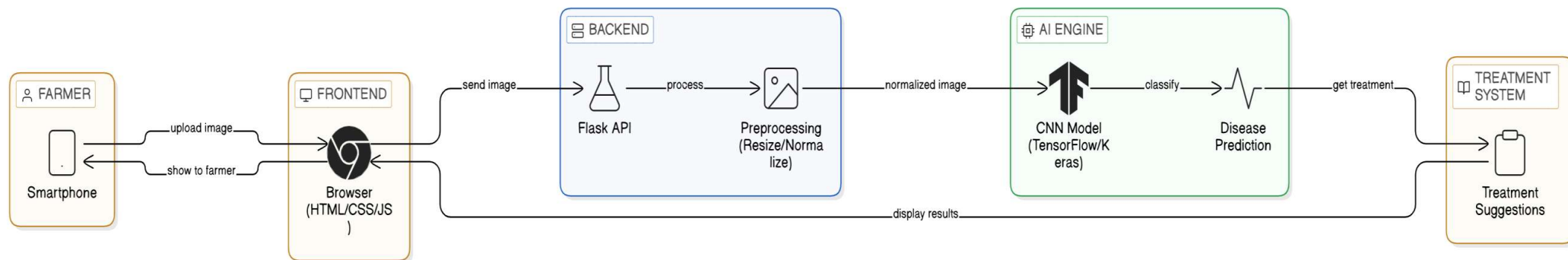


# TECHNICAL APPROACH



## Technologies Used:-

- Python
- TensorFlow / Keras (CNN Model)
- Flask (Backend API)
- HTML
- CSS
- JavaScript





# FEASIBILITY AND VIABILITY



## Feasibility:-

- No hardware required
- Low cost implementation
- Uses open-source tools

## Challenges:-

- Model accuracy depends on dataset
- Internet requirement
- Different lighting conditions in images

## Solutions:-

- Data augmentation
- Model retraining
- Optimize for mobile usage



## CHALLENGES & RISKS

- Incorrect prediction risk
- Limited dataset coverage
- Farmers may upload unclear images

### **Mitigation:-**

- Confidence score display
- Clear instructions for image upload
- Continuous model improvement





# IMPACT AND BENEFITS



## Social Impact:-

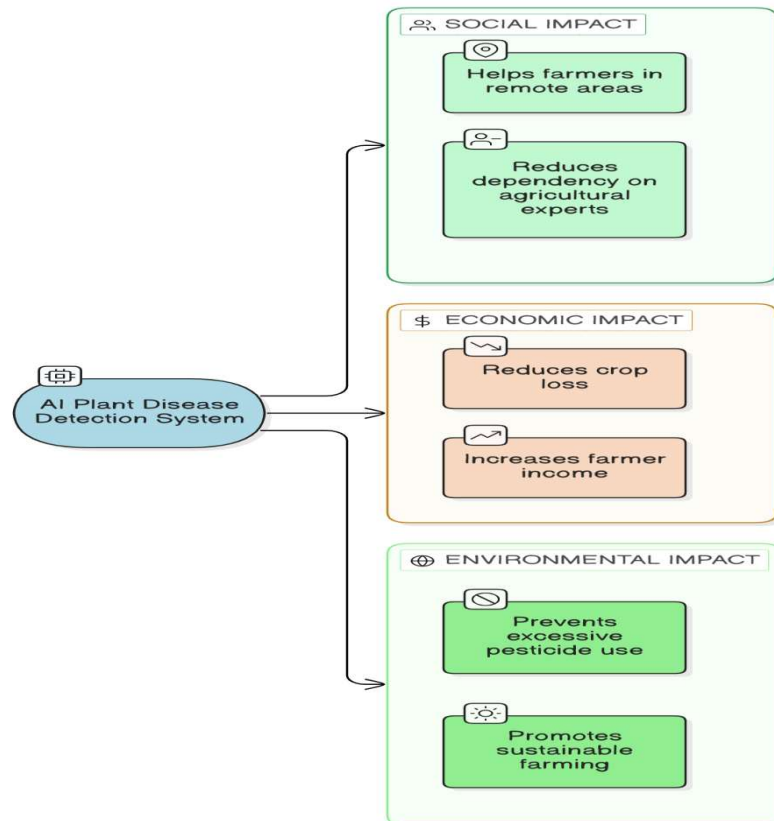
- Helps farmers in remote areas
- Reduces dependency on experts

## Economic Impact:-

- Reduces crop loss
- Increases farmer income

## Environmental Impact:-

- Prevents excessive pesticide use
- Promotes sustainable farming





## TARGET USERS

- Farmers
- Agricultural students
- Government agriculture departments
- Agri start-ups





## FUTURE SCOPE

- Multi-language support (Hindi, Marathi, etc.)
- Voice-based interaction
- Offline model deployment
- Integration with weather data
- Government agriculture portal integration





# BUSINESS MODEL / PROFIT STRATEGY

- Free basic disease detection
- Premium subscription for:
  - \* Advanced analytics
  - \* Personalized farming tips
- Government collaboration
- Agri-company partnerships





# RESEARCH AND REFERENCES

- Plant Village Dataset
- TensorFlow Documentation
- Research papers on CNN for plant disease detection



# IMPORTANT INSTRUCTIONS



Please ensure below pointers are met while submitting the Idea PPT:

1. Try to avoid paragraphs and post your idea in points /diagrams / Infographics /pictures
2. Keep your explanation precise and easy to understand
3. You can only use provided template for making the PPT without changing the idea details pointers (mentioned in previous slides).

**Note - You can delete this slide (Important Pointers) when you give the seminar.**