Problem Statement 10:

Smart AI Farming Assistant

Title: Smart AI Farming Assistant – Farming Predictor + Farmer Chatbot

1. Farmers struggle because:
    - Weather is unpredictable (rain may come early/late or not at all).
    - Wrong crop selection leads to crop failure and losses.
    - Many farmers can't read English or use complex apps.
    - They don't know about changing market prices or government schemes.
    - Identifying crop diseases is difficult without expert help.
2. A single smart solution can:
    - Predict weather and recommend the best crops.
    - Talk to farmers in either gujarati or hindi language.
    - Guide them about markets, diseases, and schemes.(LLM/Recommendation)

Challenges

1. Weather prediction is tricky → system must be reliable even with limited data.
2. Farmers speak many languages/dialects → chatbot must handle them.
3. Poor internet in rural areas → app must work offline or with SMS/IVR.
4. Many farmers don't trust "complicated tech" → system must give simple and transparent advice.
5. Solution must run even on low-cost smartphones and basic phones.

Requirements

A) Data Generation & Prediction

1. Collect or generate data for:
    - Soil type and pH (10 types)
    - Rainfall (past + predicted)
    - Temperature (daily high/low/average)
    - Humidity
    - Sunlight hours
    - Wind speed/direction
2. Build AI/ML models to:
    - Predict rainfall (amount, duration, probability) and Temperature.
    - Suggest best crops for all types of soil for predicted weather

B) AI Chatbot for Farmers

The chatbot supports Indian languages like Hindi and Gujarati, with voice and text interfaces so all farmers can use it.

It gives farming guidance and plant growth tips such as the right time to plant, how much to water, best fertilizers, and easy explanations of soil test results,the chatbot will use AI to detect plant diseases and suggest suitable treatments, including natural remedies.

The chatbot explains government schemes in simple words—covering eligibility, benefits, and how to apply—and also connects farmers to a community Q&A forum for shared learning.

C) User Interface (UI)

Must be farmer-friendly UI and SMS interface for basic phones.
Offline Mode: Store essential info when there is no internet.