Web Innovators Hackathon

Project Title: Smart Agriculture Market Tracker

Overview

In Pakistan, thousands of farmers and vegetable vendors make critical business decisions without real-time data. Prices of vegetables fluctuate daily across different regions, and unpredictable weather adds more uncertainty.

Your mission is to build a web-based platform that empowers farmers with transparent market rates, weather insights, and community knowledge, all in one place.

Objective

Develop a **full-stack web application** that allows:

- **Admins** to upload and manage vegetable/fruit market data.
- **Farmers** to view up-to-date prices, see weather updates, track trends, and discuss issues in a farming community forum.

Core Functional Modules

1. Authentication

- Two types of users: **Admin** and **Farmer**.
- Admin uploads or updates market data.
- Farmers log in to access dashboards and interact with the system.

2. Admin Dashboard

- Upload/update **daily market rates** of vegetables and fruits.
- Add, edit, or delete items.
- Optionally view summary stats such as total entries or average prices.

3. Farmer Dashboard

- Display all vegetable/fruit prices in a **clear, searchable table**.
- Show **region-specific weather updates**.

4. Data Visualization

Each listed vegetable/fruit must include a **7-day price trend chart**.

Implementation details:

- Simulate 7 days of price data.

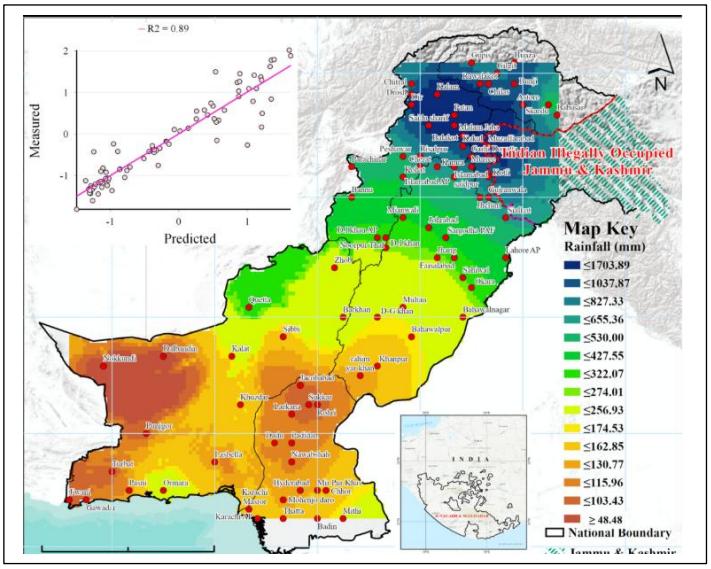
- Visualize prices using **Chart.js**, **Recharts**, or any JS chart library.
- Graph should display **Price vs. Date** with hover tooltips.

Bonus Challenge:
Allow comparison of multiple vegetables (e.g., “Tomato vs. Potato” price trends).

5. Weather Module

- Display live or mock weather data for multiple Pakistani cities.
- Represent data visually (e.g., icons, temperature, humidity).
- Bonus: Visualize data on a **Pakistan map** using color-coded regions, blue for rain, yellow for heat, green for normal.

Reference Image:



6. Smart Farmer Advice (AI or Logic-Based Feature)

To make this project truly smart, generate short **AI-based or rule-based advice** for farmers.

Examples:

- Avoid watering crops today, rain expected.
- Tomato prices are rising; sell within the next two days.

Implementation Options:

- **Option 1:** Use your own logic (if weather = rain then advice = “Don’t water”).
- **Option 2 (Advanced):** Use **OpenAI GPT API** (or any LLM) to automatically rate or generate advice.

7. Community Forum

- Farmers can **post**,and **comment**.
- Perform **CRUD operations** on posts and comments (create, read, update, delete).
- Encourage meaningful user interactions.

Recommended Tech Stack

Layer	**Suggested Tools**
Frontend	HTML, CSS, JavaScript *(or React if comfortable)*
Backend	Node.js (Express) / Flask / Django
Database	MongoDB / MySQL / SQLite
APIs	Weather API (OpenWeatherMap), GPT API (optional)
Charts	Chart.js, Recharts, or D3.js

Evaluation Criteria (100 Marks)

Area	**Description**	**Marks**
Functionality	Core modules (Admin, Farmer, CRUD, Charts)	35
Data Visualization	7-day price trends & graphs	15
Weather & AI Advice	Integration & creativity	15
UI/UX	Clean, professional, responsive design	15
Code Quality	Readability, modularity, and documentation	10
Presentation	Demo clarity & explanation	10

Hackathon Duration

8 Hours Total
Teams of **2–3 students**

Submission Deliverables

- Deployed application or localhost demo

- Source code (GitHub)

Tips for Participants

- Focus on **usability first**, make the dashboard clean and simple.
- Don’t overcomplicate UI animations, prioritize data clarity.
- Commit code regularly (show progress).
- Bonus points for meaningful visuals, logical advice, and good code structure.