Problem Statement 15: AI-Assisted Yield Trend Analysis and Farm Planning System

The Challenge

Understanding yield variability across seasons is essential for improving farm productivity. However, yield data combined with environmental and management factors is often underutilized due to analysis of complexity. An intelligent system is required to analyze historical yield trends and identify contributing factors.

Yield & Farm Data Analysis Agent

An agent that processes historical yield records, crop inputs, weather conditions, and soil data.

Trend & Correlation Detection Agent

An agent that identifies patterns and correlations affecting yield performance using historical data.

Planning & Insight Assistant

An agent that provides data-driven insights for farm planning and improvement (assistive only).

Outcome

Supports better farm planning, productivity analysis, and sustainable agricultural practices.

Mandatory Tech Stack

Lang Flow using IBM Granite Model.
 (Using RAG on crop yield studies, farm management guidelines, and agricultural research references.