**Project Name/Idea Name:**

Avocado Farm Management System CLI

**Project Problem Statement:**

Managing an avocado farm is a hard task involving a variety of critical activities. These include tracking tree health, managing irrigation, planning and managing harvests, handling inventory, and recording farm expenses. Traditionally, these tasks are managed through manual methods such as spreadsheets or paper records, which are not only inefficient but also prone to human error. As a result, farmers may struggle with suboptimal productivity, increased operational costs, and difficulties in making informed decisions. The lack of a streamlined, integrated approach to manage these tasks can lead to missed opportunities for optimizing farm operations and maximizing profitability.

**Solution Statement:**

To address these challenges, I will be developing a CLI-based Farm Management System for avocado farms. This system will provide an efficient way to manage key farm activities through a command-line interface. By focusing on core functionalities that can be realistically implemented in a CLI environment, the system will enable farmers to efficiently track and manage tree health, irrigation schedules, harvest planning, inventory, and farm expenses. The goal is to reduce inefficiencies, minimize errors, and enhance decision-making processes, ultimately leading to improved farm productivity and profitability.

**Project MVP/Application Features**

1. **Tree Health Monitoring**
   * Record and monitor various growth stages of each tree, from planting to maturity. Include specific metrics like height, and leaf health.
   * Log all pest control treatments administered, including type of treatment, application dates, and efficacy results. Track any adverse reactions or notable changes in tree health.
   * Maintain a log of fertilization activities, detailing types of fertilizers used, application dates, and observed impacts on tree growth and fruit production.
2. **Irrigation Management**
   * Set up and adjust irrigation schedules based on tree requirements, weather conditions, and soil moisture levels.
   * Record irrigation activities, including the volume of water used, duration, and method of application. Track any deviations from scheduled plans and the reasons for them.
3. **Harvest Planning & Management**
   * Document projected harvest dates based on tree maturity, weather conditions, and historical data. Update and adjust estimates as needed.
   * Maintain detailed records of harvested quantities, including dates and individual tree contributions. Track any issues or anomalies encountered during harvesting.
4. **Inventory Management**
   * Log quantities of harvested avocados, including details on size, quality, and any defects.
   * Record and manage storage locations for harvested avocados, ensuring proper conditions are maintained.
   * Track the status of inventory, including any spoilage, distribution, or processing activities.
5. **Sales and Distribution Tracking**
   * Record details of sales orders, including customer information, order quantities, and delivery instructions.
   * Maintain a database of customer information, including contact details and purchase history.
   * Log delivery details, track shipments, and manage any issues related to distribution.
   * Track and analyze sales performance metrics such as total revenue, order volume, and customer trends.
6. **Farm Expense Tracking**
   * Categorize and record various farm expenses, including labor costs, materials (fertilizers, pesticides), equipment maintenance, and operational costs.
   * Generate reports that detail major expense areas, trends over time, and budget deviations. Use these reports to identify cost-saving opportunities and make informed financial decisions.
7. **Reports and Analytics**
   * Generate detailed text-based reports covering aspects such as farm productivity, sales performance, and expense summaries.
   * Provide simple data visualization options like text-based graphs and tables to help users interpret and analyze data more easily.
8. **CLI Interface**
   * Implement a text-based interface to navigate through different features and functionalities of the application.
   * Provide command options for users to input data, retrieve reports, update records, and access various features. Ensure commands are intuitive and well-documented.