

**THE UNIVERSITY OF AZAD JAMMU AND KASHMIR, MUZAFARABAD**

**Project Proposal**

**Farming Management System**

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**Semester:** 2nd Semester

**Course:** Object-Oriented Programming (***OOP***)

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### *Department of Software Engineering*

### 1. ****Introduction:****

### Agriculture is the backbone of many economies. Farmers often struggle with managing land, crops, equipment, and resources efficiently. This project aims to provide a simple yet powerful farming management system to help farmers track and manage their farming activities using object-oriented principles.

### 2. Objectives:

* To create a system that manages land plots, crops, and farming equipment.
* To apply OOP principles like encapsulation, inheritance, polymorphism, and abstraction.
* To provide an easy interface for assigning crops to land and tracking their growth.
* To manage inventory items like seeds and fertilizers.
* To improve productivity and planning in farming operations.

### 3. Scope of the Project:

The system will allow a farmer to:

* Add and manage multiple land plots
* Assign crops to plots and monitor their status
* Manage farming equipment and inventory
* View weather conditions (basic mockup logic)
* Track sowing and harvesting dates

### 4. Modules / Functionalities:

|  |  |
| --- | --- |
| Module | Description |
| Farmer Management | Add/view farmers' basic info |
| Land Management | Manage land plots, assign crops |
| Crop Management | Add crops, view growth/harvest status |
| Equipment Management | Assign tools/equipment to land |
| Inventory Module | Track and use farming items (seeds, fertilizer) |
| Weather Module (Optional) | Show simple weather info for sowing help |

***UML diagram for farming management system***



**Inheritance:**

* Farmer inherits from User

**Aggregation/Composition:**

* Farmer → LandPlot
* Farmer → Equipment
* Farmer → Inventory
* LandPlot → Crop

**Association:**   
Farmer → WeatherModule

***OOP Concepts Used*:**

* + Classes and Objects
  + Inheritance
  + Polymorphism
  + Encapsulation
  + Abstraction

***File for overview***

Just for overview that how our project will work. Open the below file for overview of our project.



### 5. Tool & Technology:

* **Programming Language: C++**
* **IDE:** Dev C++
* **Modeling Tool:** UML diagrams (Class Diagram)
* **Database:** File Handling

### 6. Benefits of the System:

* Makes farming tasks easier to plan and organize.
* Helps track crops and equipment usage.
* Improves decision-making with record-keeping.
* Demonstrates real-world application of OOP concepts.

### 7. Conclusion:

This project will not only serve as a helpful tool for managing farming operations but also enhance the understanding and practical application of object-oriented programming principles in real-world scenarios.