THE UNIVERSITY OF AZAD JAMMU AND KASHMIR, MUZAFARABAD

Project Proposal

Farming Management System

Submitted By:

Group #02

Department: BS Software Engineering

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

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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

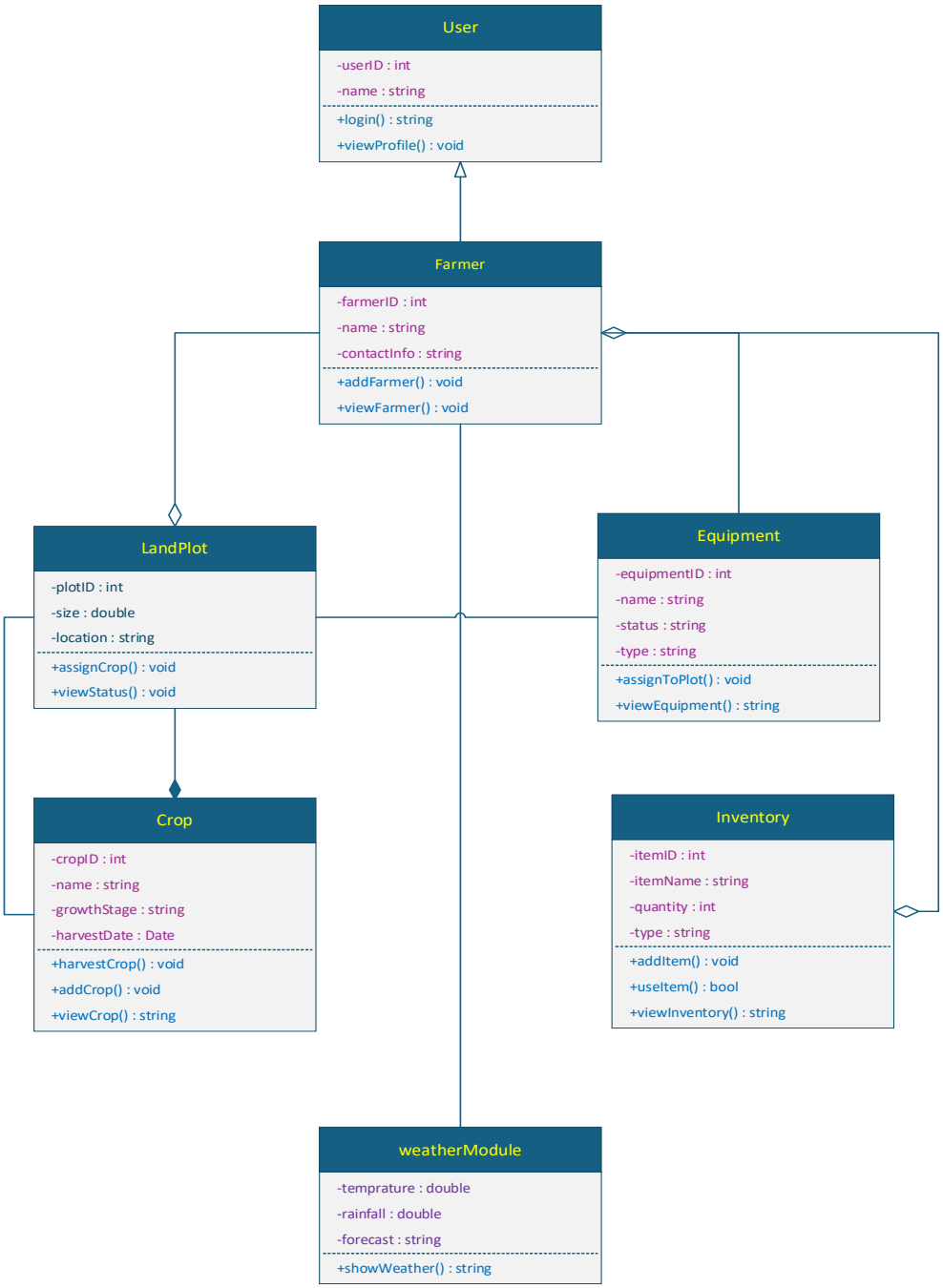
4. Modules / Functionalities:

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

5. Tool & Technology:

- **Programming Language: C++**

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.

FarmManagementOverview.cpp

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.