**DIGITAL ASSET MANAGEMENT**

**SCOPE AND PURPOSE OF ASSET MANAGEMENT:**

**PURPOSE OF THE PROJECT:**

The purpose of the Digital Asset Management System is to provide an efficient, centralized, and user-friendly application to manage physical assets such as laptops, equipment, and devices within an organization. It automates the processes of:

* Adding, updating, and deleting asset information.
* Allocating assets to employees.
* Performing and tracking asset maintenance.
* Reserving and withdrawing reservations of assets.

By doing so, the system ensures that:

* Assets are properly tracked throughout their lifecycle.
* Maintenance schedules are enforced for asset safety.
* Resource allocation and utilization are optimized.
* Errors due to manual record-keeping are eliminated.

It serves as a digital alternative to spreadsheets or paper-based systems and brings automation, accuracy, and accountability to asset management.

**SCOPE OF THE PROJECT:**

**TECHNICAL SCOPE:**

* Entity Modeling: Real-world entities like assets, employees, maintenance records, etc., are modeled using classes in the entity package.
* Database Integration: All operations are performed on a MySQL database using SQL queries through Python.
* OOP Principles: Inheritance, encapsulation, and modularity are used throughout the code.
* Exception Handling: Custom exceptions (AssetNotFoundException, AssetNotMaintainException) ensure business logic is enforced and errors are handled gracefully.
* Unit Testing: Key functionalities are tested using Python’s unittest framework to ensure correctness.
* Modular Code Structure: Organized using packages like dao, util, exception, and main.

**FUNCTIONAL SCOPE:**

* Manage asset lifecycle: Add, update, delete.
* Allocate and deallocate assets to/from employees.
* Track and record maintenance with dates and costs.
* Reserve assets for future use and handle reservation withdrawal.
* Ensure assets are safe (maintained within 2 years) before use.