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# Software Introduction

In a world where it is hard to keep track of products or items in inventory, there is a need for a program that can manage inventory, update stock automatically after each sale, track each transaction, and provide sales insights. This new system will feature a user-friendly graphic interface that ensures comfort for everyday use. It will allow users to add and delete items, manage sales through intuitive buttons, and automate inventory updates so users don’t need to worry about manual changes.

The system will be built in Python and will use an SQL database to store data. It will include functions to handle database updates and make backups every time an interaction occurs.

# System Requirement-

* Python Developer
* SQL Developer
* Database Manager
* Module Organizer
* UI Designer
* Debugger
* Tester
* Modules
* SQL database functionality for data updating through Python
* Object-oriented programming for items
* Graphical User Interface (GUI)

# System Architecture

The architecture of this system will be object-oriented. The UI module will be the primary interface where users interact with the system. Data will be stored in a database where all information is saved. The program itself will process input from the UI module, handle commands, perform operations, and update data as needed.

# System Evolution

The system is expected to be up and running within six weeks. Initially, it will work on a single computer but can be expanded to other computers on the same LAN network within the business. This will ensure that all data is updated consistently without any loss. The system will be delivered with the planned features, and additional features can be added later if requested by the customer. Data consistency will be maintained to prevent any loss or corruption.

# System Development Life Cycle

Planning

Define the scope and objectives of the project.

* Identify key features
* Set a timeline for deployment
* Conduct a risk assessment and feasibility study

Requirements Analysis

Analyze the requirements needed for efficient system functionality.

* Create documentation
* Define data validation and field types

Design

Develop solutions for system structure and data schema.

* Design a user-friendly interface
* Define database tables (schema)
* Specify modules and functions

Development

Begin coding and implement the planned design.

* Implement SQL for data management
* Build backend functions
* Design the front end
* Break components into modules for future updates

Testing

Ensure the system functions as expected or exceeds expectations.

* Test each field for accuracy
* Verify data integrity
* Confirm data safety in case of software or hardware failure
* Resolve bugs or issues found

Deployment

Release the initial version with key features operational.

* Set up the system on the store’s computer
* Ensure all features work as expected
* Provide user training

Maintenance

Improve the system over time and address any issues reported by users.

* Collect feedback
* Add requested features
* Release new versions as necessary

# Hardware Components

Minimum requirements: a computer with a dual-core processor, 8 GB of RAM, and at least 256 GB of storage for smooth performance. Additional equipment includes a barcode scanner and printer for receipts and inventory reports.

Software Components

* Operating System: Windows 10 or later for maximum compatibility
* Programming Language: Python with a MySQL database backend