

# ***Inventory management using python***

In today's fast-paced digital world, managing inventory manually is not only outdated but risky. Whether you're running a warehouse, small business, or even an e-commerce store, an efficient inventory management system is critical.

In this article, I'm giving you an Advanced Inventory Management System in Python, complete with a modern UI using PyQt5, real-time stock updates, analytics dashboard, export options, and many more features.

You'll have a deployable system ready to use and a fully customizable inventory management system with Python.

Language	Python
Code Editor	Visual Studio Code
Library	<b>PYQT5</b> for GUI <b>SQLite</b> - light database <b>Matplotlib</b> for charts <b>Pandas</b> for data handling and export

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## Key Features:

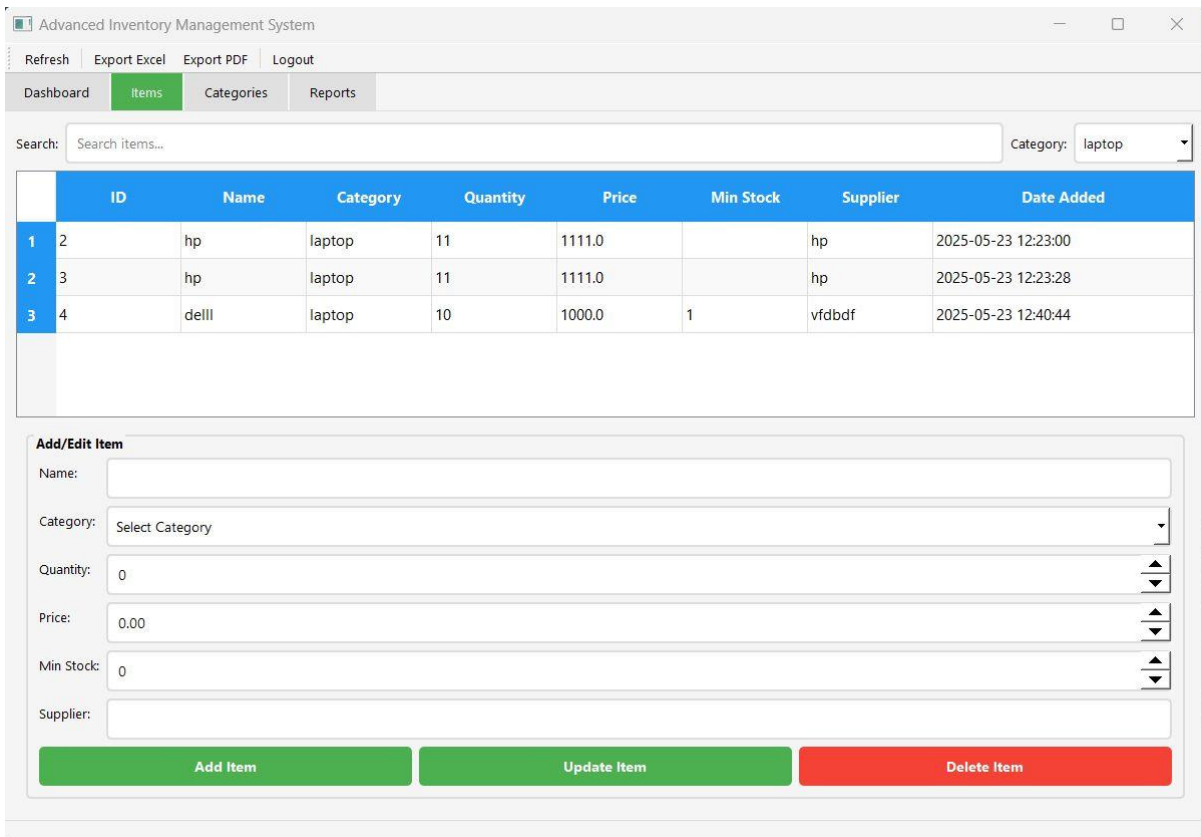
### Authentication System

- Secure login with password hashing
- Role-based access control
- Default admin account (username: admin, password: admin)

### Modern Dashboard

- Real-time statistics cards (Total Items, Low Stock Alerts, Categories)
- Interactive charts showing stock levels with colour-coded bars
- Professional styling with modern UI .
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### Complete Item Management



The screenshot displays the 'Advanced Inventory Management System' interface. At the top, there are navigation links: 'Refresh', 'Export Excel', 'Export PDF', and 'Logout'. Below these are tabs for 'Dashboard', 'Items' (which is active), 'Categories', and 'Reports'. A search bar is located above the table, with a 'Category' dropdown set to 'laptop'. The table lists three items with columns for ID, Name, Category, Quantity, Price, Min Stock, Supplier, and Date Added. The first two items are highlighted in blue. Below the table is a form titled 'Add/Edit Item' with fields for Name, Category (a dropdown), Quantity, Price, Min Stock, and Supplier. At the bottom of the form are three buttons: 'Add Item' (green), 'Update Item' (green), and 'Delete Item' (red).

	ID	Name	Category	Quantity	Price	Min Stock	Supplier	Date Added
1	2	hp	laptop	11	1111.0		hp	2025-05-23 12:23:00
2	3	hp	laptop	11	1111.0		hp	2025-05-23 12:23:28
3	4	delll	laptop	10	1000.0	1	vfdbdf	2025-05-23 12:40:44

**Add/Edit Item**

Name:

Category:

Quantity:

Price:

Min Stock:

Supplier:

- Add, update, delete items with full form validation.
- Real-time search and category filtering
- Visual low-stock indicators (red highlighting)
- Comprehensive item details (name, category, quantity, price, minimum stock, supplier)

## Category Management

Advanced Inventory Management System

Refresh

Export Excel

Export PDF

Logout

Dashboard

Items

Categories

Reports

laptop

phone

Add/Edit Category

Name:

phone

Description:

this is for phone

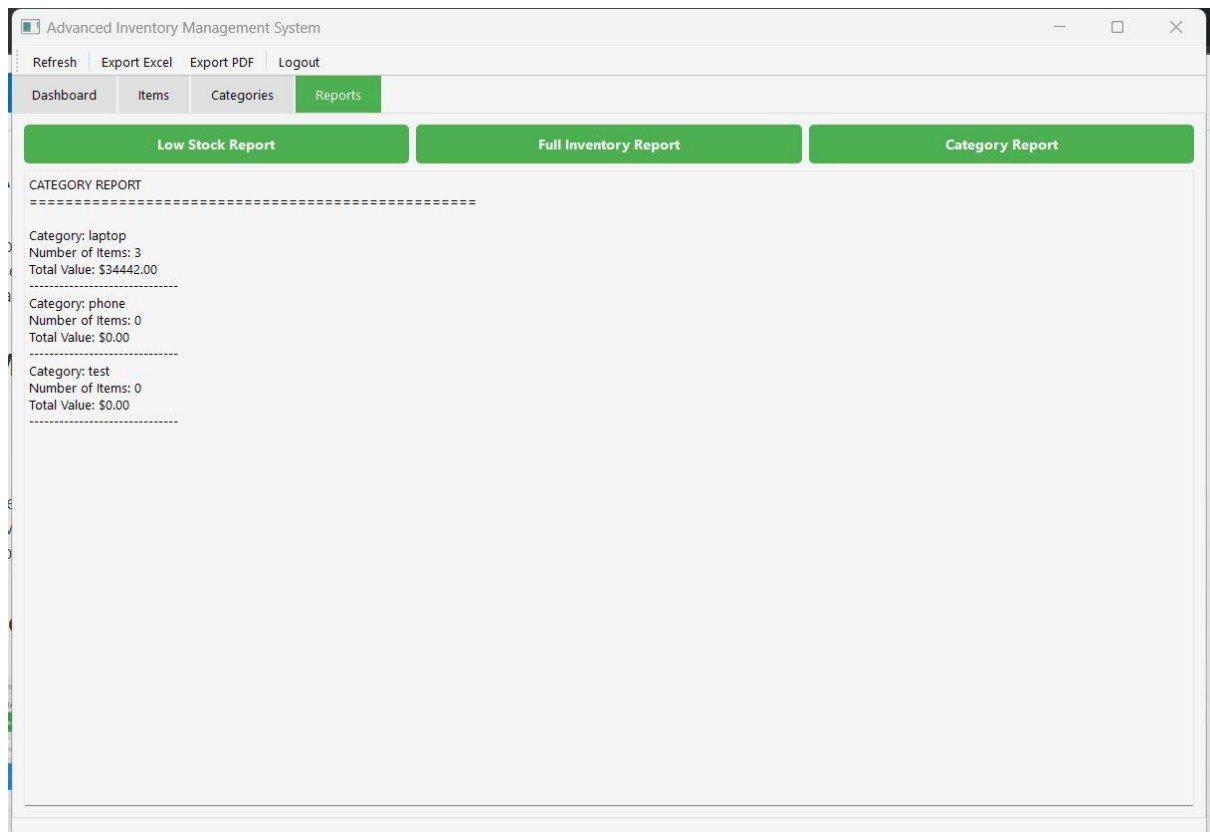
Add Category

Update Category

Delete Category

- Dynamic category creation and management
- Category-based filtering and organization
- Detailed category descriptions

## Advanced Reporting



- Low Stock Reports
- Full Inventory Reports with total value calculations
- Category-wise analysis reports
- Real-time report generation

### Export Capabilities

- Excel export with pandas integration
- Professional PDF reports with proper formatting
- Customizable export options

### Professional UI/UX

- Modern flat design with consistent styling
- Color-coded elements for better UX
- Responsive layout with tabbed interface
- Intuitive toolbar with quick actions

### Robust Data Management

- SQLite database with proper relationships
- Automated database initialization
- Error handling and data validation
- Transaction safety