INVENTORY MANAGER

A SIMPLE INVENTORY MANAGEMENT SYSTEM WITH DATABASE INTEGRATION

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PROJECT OVERVIEW

1. Objective:
- Build an inventory management system to handle adding, updating, deleting, and searching inventory items.
- Integrate MySQL for database management.

2. Features:
- View Inventory Items
- Add, Update, and Delete Items
- Search Items by Name
- Store and retrieve data from a MySQL database

DATABASE SCHEMA

- Database Name: inventory_db
- Table:
- items
  - Columns: id, name, quantity, price
  - Purpose: Stores details of the inventory items.

	id	name	quantity	price
▶	1	Pen	50	10
	2	Pencil	50	5
	3	Book	100	50
*	NULL	NULL	NULL	NULL

SYSTEM ARCHITECTURE

- Components:
- Frontend: User Input via the command line interface (CLI).
- Backend: Java Application (JDBC) communicates with the MySQL database.
- Database: MySQL to store inventory data.
- Process Flow:
1. User interacts with the app through the CLI.
2. App queries and updates the database as per user input.
3. Data is shown on the console.

MAIN FEATURES

- **View Items**: Displays a list of all items stored in the inventory.
- **Add Item**: Adds new items to the inventory with name, quantity, and price.
- **Update Item**: Updates the quantity and price of an existing item.
- **Delete Item**: Deletes an item from the inventory by ID.
- **Search Items**: Search for inventory items by their name.

METHOD OVERVIEW

Method	Purpose	Main SQL Query
viewItems	Display all items	SELECT * FROM items
addItem	Add new item	INSERT INTO items (name, quantity, price)
updateItem	Update existing item	UPDATE items SET quantity = ?, price = ? WHERE id = ?
deleteItem	Delete item by ID	DELETE FROM items WHERE id = ?
searchItems	Search item by name	SELECT * FROM items WHERE LOWER(name) LIKE ?

DATABASE

1. CREATE DATABASE inventory_db;
2. USE inventory_db;
3. CREATE TABLE items (
4.   id INT PRIMARY KEY AUTO_INCREMENT,
5.   name VARCHAR(100) NOT NULL,
6.   quantity INT NOT NULL,
7.   price DOUBLE NOT NULL
8.);

```
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 1
ID      Name            Quantity        Price
1       Book            250             200.00
2       Pencil          60              5.00
3       Eraser          50              5.00

Inventory Menu:
1. View Items
2. Add Item
3. Update Item
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 3
Enter item ID to update: 1
Enter new quantity: 300
Enter new price: 199.9
Item updated.

Inventory Menu:
1. View Items
2. Add Item
3. Update Item
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 5
Enter name to search for: Pencil
ID      Name            Quantity        Price
2       Pencil          60              5.00

Inventory Menu:
1. View Items
2. Add Item
3. Update Item
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 2
Enter name: Pen
Enter quantity: 100
Enter price: 10
Item added with ID: 4
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2. Add Item
3. Update Item
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 1
ID      Name            Quantity        Price
1       Book            300             199.90
2       Pencil          60              5.00
3       Eraser          50              5.00
4       Pen             100             10.00

Inventory Menu:
1. View Items
2. Add Item
3. Update Item
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 4
Enter item ID to delete: 4
Item deleted.

Inventory Menu:
1. View Items
2. Add Item
3. Update Item
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 1
ID      Name            Quantity        Price
1       Book            300             199.90
2       Pencil          60              5.00
3       Eraser          50              5.00

Inventory Menu:
1. View Items
2. Add Item
3. Update Item
4. Delete Item
5. Search Items by Name
6. Exit
Choose an option: 6
Goodbye!
PS C:\Users\aditya\Documents\Programs\Inventory Management>
```

CONCLUSION AND FUTURE WORK

- **Conclusion**:
- Successfully implemented a basic inventory management system with Java and MySQL.
- **Future Enhancements:**
1. Implementing a GUI for easier interaction.
2. Adding categories and suppliers for better organization.
3. Generating reports for inventory statistics.

THANK YOU