

Instructions – Electronics Store Inventory Manager

Overview:

You'll be writing a simple program to manage the inventory of an electronics store. The program will use a SQLite database to store inventory data, and you will implement functionalities to add, view, and modify the inventory using the Peewee library.

Important Notes:

Some things to remember before starting:

- You don't need to handle errors/invalid inputs, EXCEPT for the specific areas mentioned in the instructions.
- If there is no mention of what to do if an unexpected input is given, you don't need to handle it.

Libraries Required:

- peewee

Classes Required:

- InventoryItem

Logical Flow:

Set up your database and Peewee class as described below.

1. Set up a SQLite database called inventory.db using the Peewee library.
2. Create a class called InventoryItem that inherits from the Peewee Model class.
3. The InventoryItem class should have the following class variables. Use appropriate peewee fields for each of them:
 - a. item_id
 - b. name
 - c. category
 - d. price
 - e. stock
4. Override the create() method of the InventoryItem class to add validation:
 - a. Ensure the price is greater than or equal to \$0.
 - b. Ensure the stock is either 0 or in increments of 10 (e.g., 10, 20, 50, etc.).
 - i. You can imagine the reason for this is that shipments always arrive in batches of 10.
 - ii. If the validation fails, print appropriate error messages and do not create the item.
5. Implement the following menu options:
 - a. Option 1: Add an inventory item
 - i. Prompt the user for the name, category, price, and stock of the item.
 - ii. Use the overridden .create() method to add the item to the database.
 - iii. If the item is successfully added, print a success message.
 - b. Option 2: View all items

- i. Display all inventory items with their details (ID, name, category, price, and stock).
- c. Option 3: View the average price of all items
 - i. Calculate and display the average price of all items in the database.
 - 1. If there are no items in the database, print a message indicating this.
- d. Option 4: Delete an item by ID
 - i. Prompt the user for the ID of the item to delete.
 - ii. Delete the item and print a success message.
- e. Option 5: Add stock to an item by ID
 - i. Prompt the user for the ID of the item.
 - ii. Add 10 to the stock of the item using a method called `update_stock_by_10()`.
 - 1. This method should just add 10 to whatever the current number of stock is for that item in the database.
- f. Option 6: Exit
 - i. Print 'Goodbye.' and terminate the program.
- g. For any invalid input, print 'Invalid choice. Please try again.' and re-display the menu.

Example Output:

The instructions were vague on the how printed messages look, so it doesn't have to look exactly like this.

I provide 2 example outputs. 1st is adding a few items and then going through all the options. 2nd example is trying to add items that get shut down by the overridden create method.

First:

Below are examples of how the program should behave. You can use these as reference outputs:

Electronics Store Inventory Manager:

- 1. Add an inventory item
- 2. View all items
- 3. View average price of all items
- 4. Delete an item by ID
- 5. Add stock to an item by ID
- 6. Exit

Choose an option (1-6): 1

Enter the item name: Apple Watch

Enter the category: Smartwatches

Enter the price: 400

Enter the stock (in increments of 10): 100

Item 'Apple Watch' added successfully.

Electronics Store Inventory Manager:

- 1. Add an inventory item
- 2. View all items
- 3. View average price of all items

4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 1
Enter the item name: Dell Laptop
Enter the category: Computers
Enter the price: 799.99
Enter the stock (in increments of 10): 20
Item 'Dell Laptop' added successfully.

Electronics Store Inventory Manager:

1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 1
Enter the item name: USB C Cable
Enter the category: Cables
Enter the price: 10.50
Enter the stock (in increments of 10): 250
Item 'USB C Cable' added successfully.

Electronics Store Inventory Manager:

1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 2
ID: 1 | Name: Apple Watch | Category: Smartwatches | Price: \$400 | Stock: 100
ID: 2 | Name: Dell Laptop | Category: Computers | Price: \$799 | Stock: 20
ID: 3 | Name: USB C Cable | Category: Cables | Price: \$10 | Stock: 250

Electronics Store Inventory Manager:

1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 3
Average price of all items: \$403.00

Electronics Store Inventory Manager:

1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID

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5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 4
Enter the ID of the item to delete: 1
Item 'Apple Watch' deleted successfully.
```

```
Electronics Store Inventory Manager:
1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 5
Enter the ID of the item to add stock to: 2
Stock for 'Dell Laptop' updated to 30.
```

```
Electronics Store Inventory Manager:
1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 7
Invalid choice. Please try again.
```

```
Electronics Store Inventory Manager:
1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 6
Goodbye.
```

Second:

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Electronics Store Inventory Manager:
1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit
Choose an option (1-6): 1
Enter the item name: Mac Mini
Enter the category: computers
Enter the price: -30000
```

Enter the stock (in increments of 10): 10
Invalid price! Price must be greater than or equal to \$0.

Electronics Store Inventory Manager:

1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit

Choose an option (1-6): 1

Enter the item name: Mac Mini

Enter the category: Computers

Enter the price: 599

Enter the stock (in increments of 10): 7

Invalid stock! Stock must be 0 or in increments of 10.

Electronics Store Inventory Manager:

1. Add an inventory item
2. View all items
3. View average price of all items
4. Delete an item by ID
5. Add stock to an item by ID
6. Exit

Choose an option (1-6): 6

Goodbye.