Class Exercise:

Dictionary

Exercise Description:

You are now tasked with creating an advanced program for an online bookstore that includes a more complex inventory management system. The program should incorporate dictionary operations and methods, while and for loops, if and else operators, as well as functions. The program should provide additional functionality, such as calculating the total value of the inventory and generating a report based on specific criteria.

The program should include the following features:

1. Initialize an empty inventory dictionary.
2. Add books to the inventory along with their titles, authors, quantities, and prices.
3. Remove books from the inventory.
4. Update the quantity and price of existing books in the inventory.
5. Display the current inventory with detailed information for each book.
6. Check if a specific book is present in the inventory.
7. Calculate the total value of the inventory (quantity multiplied by price) and display it.
8. Generate a report of books with quantities below a certain threshold (e.g., less than 10 copies).

To make the exercise more challenging, try to modularize your code by creating functions for each operation and utilize appropriate control structures.

def display\_inventory(inventory):

# Your code here

def check\_book(inventory, book\_id):

# Your code here

def calculate\_total\_value(inventory):

# Your code here

def generate\_report(inventory, threshold):

# Your code here

def add\_book(inventory):

# Your code here

def remove\_book(inventory, book\_id):

# Your code here

def update\_book(inventory, book\_id):

# Your code here

def inventory\_management():

# Your code here

inventory\_management()

Menu:

1. Add book

2. Remove book

3. Update book

4. Display inventory

5. Check book presence

6. Calculate total value

7. Generate report

8. Exit

Enter your choice (1-8): 1

Enter book ID: 001

Enter title: Python Programming

Enter author: John Smith

Enter quantity: 10

Enter price: 29.99

Book added successfully.

Menu:

1. Add book

2. Remove book

3. Update book

4. Display inventory

5. Check book presence

6. Calculate total value

7. Generate report

8. Exit

Enter your choice (1-8): 1

Enter book ID: 002

Enter title: Data Science Handbook

Enter author: Emily Johnson

Enter quantity: 5

Enter price: 49.99

Book added successfully.

Menu:

1. Add book

2. Remove book

3. Update book

4. Display inventory

5. Check book presence

6. Calculate total value

7. Generate report

8. Exit

Enter your choice (1-8): 4

Current Inventory:

Book ID: 001

Title: Python Programming

Author: John Smith

Quantity: 10

Price: 29.99

Book ID: 002

Title: Data Science Handbook

Author: Emily Johnson

Quantity: 5

Price: 49.99

Menu:

1. Add book

2. Remove book

3. Update book

4. Display inventory

5. Check book presence

6. Calculate total value

7. Generate report

8. Exit

Enter your choice (1-8): 5

Enter book ID: 001

Book ID: 001

Title: Python Programming

Author: John Smith

Quantity: 10

Price: 29.99

Menu:

1. Add book

2. Remove book

3. Update book

4. Display inventory

5. Check book presence

6. Calculate total value

7. Generate report

8. Exit

Enter your choice (1-8): 6

Total value of the inventory: $ 649.8

Menu:

1. Add book

2. Remove book

3. Update book

4. Display inventory

5. Check book presence

6. Calculate total value

7. Generate report

8. Exit

Enter your choice (1-8): 7

Enter quantity threshold: 8

Books with quantities below 8 copies:

Book ID: 002

Title: Data Science Handbook

Author: Emily Johnson

Quantity: 5

Menu:

1. Add book

2. Remove book

3. Update book

4. Display inventory

5. Check book presence

6. Calculate total value

7. Generate report

8. Exit

Enter your choice (1-8): 8

Exiting...