

DART

TD-TP2

Exercise: You are managing a small online store that sells various products. Your task is to create a program that helps manage the inventory of the store. Follow the steps below:

1. Define a class named Product with the following attributes:
 - id (int): unique identifier for the product
 - name (String): name of the product
 - price (double): price of the product
2. Create a list of Product objects to represent the store's inventory. Add at least 5 products to the list.
3. Create a map where the keys are product IDs and the values are the corresponding Product objects.
4. Create a set containing the names of all products.
5. Implement the following functionalities:
 - Display the list of products in the inventory.
 - Allow the user to search for a product by its ID and display its details (name and price).
 - Calculate and display the total value of the inventory (sum of prices of all products).
6. Test your program by performing various operations such as displaying the inventory, searching for products, and calculating the total value of the inventory.

exercise:

1. Add functions to save **the inventory data** to a file and load it back.
2. Provide options for the user to update the inventory through the file, such as adding new products, updating prices, or removing products.
3. Implement error handling to handle file operations gracefully.