Homework - Online Store System

🎯 Assignment Goals

Practice working with:

• Objects and arrays

• Functions

• Writing in TypeScript (types, interfaces, explicit return types)

Instructions:

During the assignment, add:

• A type for every function parameter.

• An explicit return type for every function (even if it is void).

Make sure the code compiles without errors (TypeScript).

In the file store.ts there is an interface named Product that represents a product in the store and another interface named Store that represents an online store.
In addition, the store contains five products. This can be seen in the store object.

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1. Implement the function getAvailableProducts that receives a parameter of type Store and returns an array of products for which inStock === true.
   Use filter.

2. Implement the function getProductsInPriceRange that receives:
   o Store (Store)
   o Minimum price (minPrice)
   o Maximum price (maxPrice)

Returns an array of products whose price is between minPrice and maxPrice (inclusive).
Use filter.

3. Each product has a field tags, which is an array of strings.
   Implement the function getProductsByTag that receives:
   o Store (Store)
   o Tag (string – tag)

Returns an array of products whose tags include the tag. Use includes.

4. Implement the function getAvailableProductsByTag that receives:

    o Store (Store)

    o Tag (tag)

Returns an array of products for which both conditions are met:

o inStock === true

o The product's tags include the tag

Use filter and includes.

In the file, a shopping cart is defined as an array of product IDs (id).

5. Implement the function getCartProducts that receives:

    o Store

    o Shopping cart

Returns an array of products whose id exists in the shopping cart.

Use filter on the store's products array and use includes on the cart inside the filter condition. Do not use nested loops.

6. Implement the function getCartTotalInStock that receives:

    o Store

    o Shopping cart

Returns a number that represents the total price of all products:

o Whose id exists in the cart,

o And that are in stock (inStock === true)

Use forEach.