

RESPOSTA

1- Time spent on the test and what you would add if you had more time:

- I spent about 2 hours
- Add more functionality, such as support for more types of promotions, manipulation of data in different formats such as XML, and implement logs to track issues in production. I would focus more on test coverage and implementing more robust error and exception handling.

2- Most useful feature added to the latest version of Java:

- One useful feature added to Java recently is support for lambda expressions, which greatly simplifies writing code.
- Here's a snippet of code that shows how I used lambda expressions in the calculateDiscount() method of the PromotionService class:

```
public int calculateDiscount(List<Item> items) {  
  
    Map<String, Long> itemCounts = items.stream()  
  
        .collect(Collectors.groupingBy(Item::getName, Collectors.counting()));  
  
    int totalDiscount = itemCounts.entrySet().stream()  
  
        .mapToInt(entry -> calculateDiscountForItem(entry.getKey(), entry.getValue()))  
  
        .sum();  
  
    return totalDiscount;  
}
```

3- What I found most difficult:

I didn't have that much difficulty doing the activity

4- Mechanism implemented to track issues in the production of this code:

I could implement logging using the logging framework, such as Log4j or SLF4J. I would add logs at critical points in the code, such as at the beginning and end of each method, and at points where exceptions can be thrown.

5- Steps to add more sources of items with different formats and promotions:

- To integrate, I would follow the following steps:
- Identify and evaluate new sources of APIs.
- Create classes similar to "ItemService" to consume the new APIs and convert the data to the format expected by the system.
- Update the "PromotionService" class to handle the new promotions and data formats.
- Implement logs to track issues in production and monitor system performance.