Altech - Java Backend Technical Assessment

We are building the Java back-end of a web-based electronics store's checkout system. From the requirements below develop a set of RESTful endpoints and their implementation.

Usage of a framework such as Spring Boot is encouraged but not mandatory - if you feel more comfortable using something else, then please do so.

Persistence should be achieved either through an In-memory DB, Java data structures – in either case being sure to demonstrate an understanding of safe concurrent usage. If you would like to use a SQL database, please set up the related environment and ORM framework.

Electronic Store's Requirements

Admin User Operations

- Create a new product
- Remove a product
- Add discount deals for products (Example: Buy 1 get 50% off the second)

Customer Operations

- Add and remove products to and from a basket
- Calculate a receipt of items, including all purchases, deals applied and total price

Your Submission

- Everything should be tested with automated tests. If any requirement is not satisfied, a test should fail
- Include this document in your repo
- There should be one documented command to start the app
- There should be one documented command to run the tests
- Optimise for code clarity instead of performance
- Push your code to a publicly available git repository and provide a link (github.com is our preferred.)

Out of scope

- Logging
- Continuous Integration
- Deployment
- Metrics

Technical Assumption

- You may use docker and tools like docker compose to ease setup
- You may use make use of the tools to visualise your RESTful API and comply with Open API standard
- You may use any libraries, but required to use modern and common frameworks
- We will review the overall architecture, code structure, code quality and code commits
- Source code versioned controlled with git in a **Private Github Repo** and grant collaboration access to the account cs@altech.hk
- A README.md documentation about the setup instructions, data structure, architectural and technical decisions or any future improvements expected.

Any further questions, please feel free to contact us for clarification.

HINT: If you do well in the assignment then your next round will be based on adding features to it, so design your application to be easy to extend.