

**Project4 Report**

**----Option3: the official marketplace of the application**

Team members: Willie Chen

Artem Kolomiiets

Pranati Patchgolla

Yixun Lu

**CS18000SPR2023**

**PART ONE**

The option selected by our group is option 3, which is an official marketplace of the application that enables mutual selection between merchants and customers. Customers can have a more intuitive view of the merchant's sales information and sort their own selection lists, while merchants can view their customer's messages and adjust their product ranking. In option 3's selection, we have chosen to implement the two major functions of File and Statistics. To ensure a good user experience when using our program, we make it easier for customers and sellers to understand each other and allow both parties to personalize their selection of trading partners. Therefore, when using our program, users can view detailed information about the products sold by the merchants, as well as the purchase history of these products. Sellers can also view the number of products purchased by each customer and sort the sales volume in the product list. Conversely, customers can also sort the merchants based on their total sales volume.

Later, look at our code closely. Main.java is the most important program that users can run to open and use our program, and then start registering an account. Seller.java ensures that sellers can enter their product information to attract buyers and sort their products through data sorting. Store.java is responsible for providing an environment that implements the entire operating system's functionality, such as adding or removing products for merchants. Finally, Customers.java also plays an important role. Many branches are created here to assist in implementing the code's operation, such as UserBase.java and User.java, which provide user information to Customers.java. With the interface of Persistent.java, any type of object can be persisted and loaded, enabling the entire program to run successfully and providing convenient services to users.

After that, we also added the first and third optional features. Sellers can choose to keep sales and reduce the price of their products until a certain number of units are sold. Customers browsing the market will be informed of the original price and the sale price, and sellers can set a limit on the number of units per product, prohibiting customers from ordering more than the limit. Once the limit is reached, customers will not be able to place any additional orders for the product unless the seller increases or removes the limit. This ensures that our official marketplace of the application's market becomes more just and fair. This not only allows customers to have more transparent information from merchants but also prevents customers from breaking the rules. It fundamentally promotes equality between merchants and customers, making it a fair transaction for both parties. This is the reason and intention behind our choice of this option.

At last, after testing our code, although the content could run successfully, we still found some areas that could be improved. We hope to make the entire market transaction process more detailed and implement more features in Project 5. Our goal is to obtain good reviews from users and make more efforts to improve the code.

**PART TWO**

1. **Yixun Lu**

In the option 3 chosen by our group, I am responsible for creating the Customer-related code. In the program I wrote, users can play the role of customers in the official marketplace of the application to browse, learn about, and purchase products. After purchasing products, there will be a record of the purchase history, and customers can view the detailed information of the purchase records, products, and sellers. Customers can also sort sellers by their total sales to facilitate personalized selection of merchants they are interested in.

To complete this program, I divided it into many classes to write. The most important one is Customers.java, which is used to implement customer viewing of purchase records and quantities, as well as their own balance. In addition, customers can browse products directly and support keyword search and sorting according to specified characters. Use.java and UserBase.java are used to provide data for customers to use. FileModule.java is a file module that implements loading and saving data from files. With the Persistent interface, it can achieve persistence and loading of objects of any type. The remaining files are used to save purchase history and sorting，just like Message.java，StatisticsModule.java and PurchaseHistory.java.

The experience of writing this program is unforgettable for me. It was my first time writing such a long program, and I was a bit at a loss at the beginning. However, after discussing with my teammates, I gradually found a direction and got into the zone. Although my part was mostly completed successfully, I didn't implement the optional features in my code, which is a bit regretful. I hope to add more interesting functions in Project 5 to make this program that I designed for the first time more dynamic. I will work harder to do better in Project 5.

1. **Willie Chen**
2. **Artem Kolomiiets**
3. **Pranati Patchgolla**

**PART THREE**

**Expectations :**

For us, Project5 will be a challenge, and we will utilize the knowledge we recently learned in class to apply it to our own designed program, which includes Concurrency, Network IO, and GUI. Figuring out how to incorporate these skills, which we are not yet proficient in, into our code, will be a difficult task, but we will develop a series of measures and strategies to plan for improvements to the original code and avoid any possible mishaps.

In our plan, Yixun and Willie will be responsible for adding content related to Concurrency, while Pranati and Artem will be in charge of implementing Network IO and GUI functionality. We will hold group meetings and communicate through Zoom software to discuss Project5 in detail. We will adopt each person's ideas and discuss which aspects they want to work on, as well as how we can improve and upgrade Project5 based on the shortcomings of Project4. We believe that we can do better in Project5. Below is the list of tasks that we have compiled. We hope that this list will provide direction and convenience in our future code writing, so that we can be clearer about what we need to do and what needs improvement.

**Plan List :**

"Server class" - Completed by 04/12/2023 - Willie Chen.

"MarketPlace class" - Completed by 04/14/2023 - Willie Chen.

“Store class" - Completed by 04/15/2023 - Willie Chen.

"Main class" - Completed by 04/18/2023 - Willie Chen.

"Exception class" - Completed by 04/21/2023 - Willie Chen.

"Report Part2" - Completed by 04/22/2023 - Willie Chen.

"SimplePaint class" - Completed by 04/12/2023 - Yixun Lu.

"UserBase class" - Completed by 04/13/2023 - Yixun Lu.

"PurchaseHistory class" - Completed by 04/14/2023 - Yixun Lu.

"Customers class" - Completed by 04/18/2023 - Yixun Lu.

"Report Part2" - Completed by 04/22/2023 - Yixun Lu.

"Seller class" - Completed by 04/12/2023 - Pranati Patchgolla.

"AllStore class" - Completed by 04/14/2023 - Pranati Patchgolla.

"AllProducts class" - Completed by 04/15/2023 - Pranati Patchgolla.

"Report Part2" - Completed by 04/20/2023 - Pranati Patchgolla.

"Client class" - Completed by 04/13/2023 - Artem Kolomiiets.

" Report Part2" - Completed by 04/19/2023 - Artem Kolomiiets.

" Report Part1" - Completed by 04/21/2023 - Artem Kolomiiets.

**Teamwork :**

In team collaboration, each person is an independent individual, so creating a good team collaboration atmosphere is crucial. Each member of the team is a cooperative partner, and we all cherish the time we spend together. Getting along with people requires time and effort.

To create a good team collaboration atmosphere, we should not complain about others and try to bring positive energy to the team. To make team members more familiar and understand each other better, we regularly organize meetings, giving everyone the opportunity to express their suggestions. We actively evaluate everyone's suggestions, so that we can understand each other better and ensure that the work is carried out smoothly. Having good intentions and enthusiasm is not enough for any team. We also need smooth information communication and emotional communication, as well as achieving consensus on setting goals and implementing work plans in all aspects.



**BOILER UP!**