1. I used Layering in my design.
2. Why choose Layering?

This is because：

a. In a distributed system, through the three-layer architecture, the coupling between codes can be reduced, and the division of labor at each layer is more clear.

b. And at the same time, the construction of the logical layer allows the application to run on multiple machines, so as to make full use of the network’s calculation function.

c. In addition, the user side can only access the data layer through the logic layer, which reduces the entry point that can effectively ensure the security of the system.

1. The Access layer and UI Layer are the User-interface layer (UI).

At this layer, users access the front-end page of the view layer through the terminal device (mobile phone/PC) of the Access layer. The UI layer is divided into buyer and seller pages. The seller’s page is mainly divided into pages for publishing products, closing products, logging in, registering, and product details, while the buyer pages are mainly divided into two pages for bidding and querying. The operations of buyers and sellers on the visualized page of the UI layer will be transmitted to the Business Layer to process the business logic of the front-end request.

1. The Business layer is also can be called by business logical layer (BLL).

At this layer, SellerClients and BuyerClients are connected with Frontend through RMI. This layer is used to process the business logic requested by the UI layer and request the Datebase Service to create the entity information of a product.

1. Data service Layer can be also called by data access layer.

Frontend connects with Backend through Jgroup. Database Service is mainly used to store auction data, such as sellers, sellers, product information and so on that need to be saved here. At the same time, multiple copies of the backend were made in databse to prevent data loss due to a server problem and the auction cannot continue.