3a：Architectural Styles

The software uses a three-tier client/server (C/S) architecture style. The three-tier C/S structure divides application functions into three parts: presentation layer, function layer and data layer. Our storage cabinet utilizes this architecture style, realizes three levels of independence logically, and makes the system more simple and clear.

The presentation layer is the user interface part of the application, which bears the function of dialogue between users and applications. It is used to check the data input from the keyboard and other users, and displays the data output from the application. In order to allow users to operate intuitively, graphical user interface (GUI) is generally used, which is simple to operate, easy to learn and easy to use. When changing the user interface, only the display control and data checking procedures needs to be rewritten, without affecting the other two layers. The content of the inspection is also confined to the form and value of the data, excluding the processing logic of the business itself. Visual programming tools are mainly used for the development of this layer.

Functional layer is equivalent to the ontology of the application, which is to logically program specific business processing. In our storage cabinet system, when users access the order, they are required to calculate the order amount, configure the data according to the given format, and output the order. The data was required to be processed here should be obtained from the presentation layer or the data layer. In the functional layer, it includes the function of confirming user's access to application and data inventory, and the function of recording system's log processing.

The data layer is DBMS, which handles the reading and writing of database data. DBMS can quickly update and retrieve large amounts of data. Therefore, customer information, order information, and evaluation will be kept in the data layer to facilitate system calls and reading and writing.

Using this three-tier C/S structure in the storage cabinet can improve the maintainability of the program and guarantee information security and user experience for customers.

该软件使用了三层客户/服务器（Client/Server ,C/S）的架构风格。三层C/S结构是将应用功能分成表示层、功能层和数据层三部分。我们的存储柜正是使用了这种架构风格，在逻辑上实现三个层次的独立，使系统更加简单明了。

表示层是应用的用户接口部分，它担负着用户与应用间的对话功能。它用于检查用户从键盘等输入的数据，显示应用输出的数据。为使用户能直观地进行操作，一般要使用图形用户接口(GUI)，操作简单、易学易用。在变更用户接口时，只需改写显示控制和数据检查程序，而不影响其他两层。检查的内容也只限于数据的形式和值的范围，不包括有关业务本身的处理逻辑。在这层的程序开发中主要是使用可视化编程工具。

功能层相当于应用的本体，它是将具体的业务处理逻辑地编入程序中。在我们的存储柜系统中，在制作用户存取订单时要计算订单金额，按照给定的格式配置数据，输出订单，这里所需要处理的数据要从表示层或数据层取得。在功能层中包含有：确认用户对应用和数据库存取权限的功能以及记录系统处理日志的功能。

数据层就是DBMS，负责管理对数据库数据的读写。DBMS能迅速执行大量数据的更新和检索。所以客户信息、订单信息、和评价会存储在数据层，方便系统的调用和读写。

快递柜使用这种三层C/S结构可以提高程序的可维护性，对于客户信息安全和用户体验都有很好的保证。