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The task of second week

In the second week, our task is drawing four kinds of UML diagrams, to complete every step according to the needs of our group in drawing process, and to understand and understand the benefits of this picture after each picture is completed.

1. Class diagram

In system analysis and design stage, classes can usually be divided into three categories, namely, entity class, control class and boundary class.

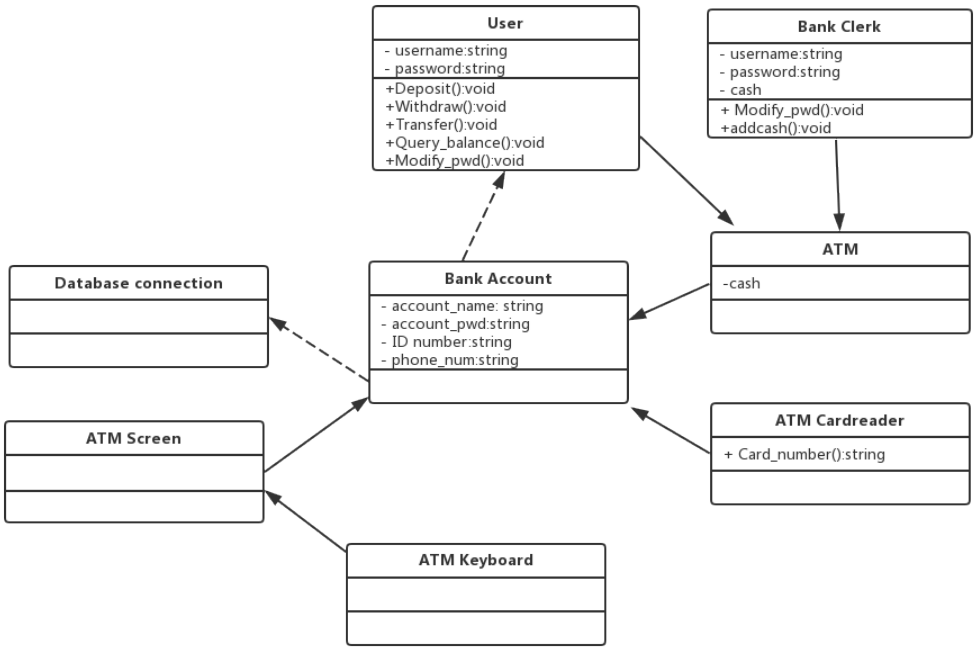
In the UML class diagram, the class is generally composed of three parts:

(1) the first part is the class name: each class must have a name,

and the class name is a string.

(2) the second part is the attribute of the class : the attribute refers to the nature of the class, that is, the member variable of the class. A class can have any multiple attributes or no attributes.Many class is Depending on other Class.There are some relationship between different Class.

Here,we have eight Class and the relationship between each class. For example, the Class User has two private attributes. They are username and password ,the data types are string. And it has five public methods: Deposit(), Withdraw(), Transfer(), Query_balance , Modify_pwd().



2. Use case diagram:

The relationship between use cases:

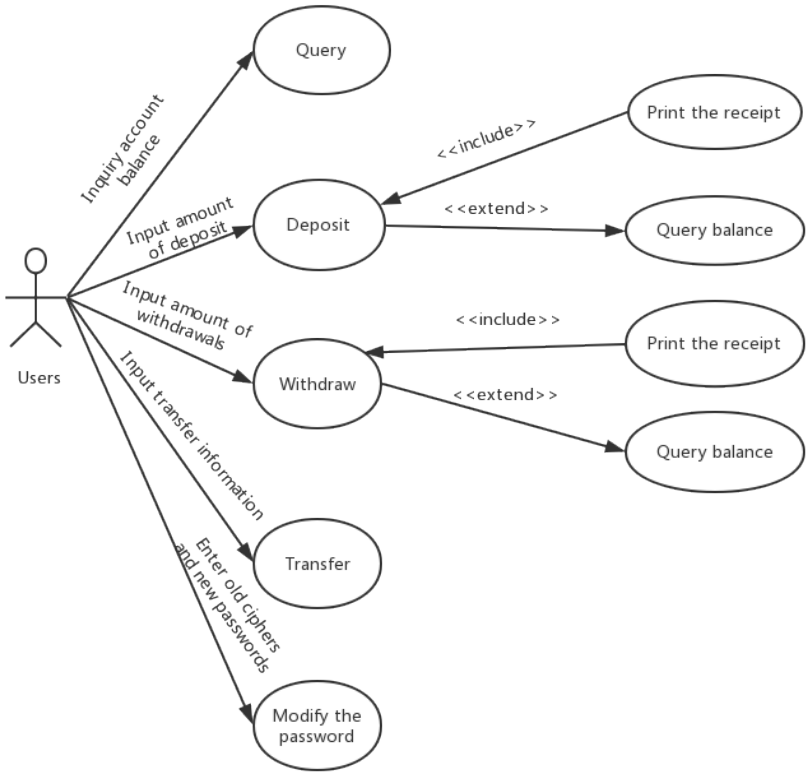
(1) correlation (2) generalization relationship (3) including relation (4) extension relation.

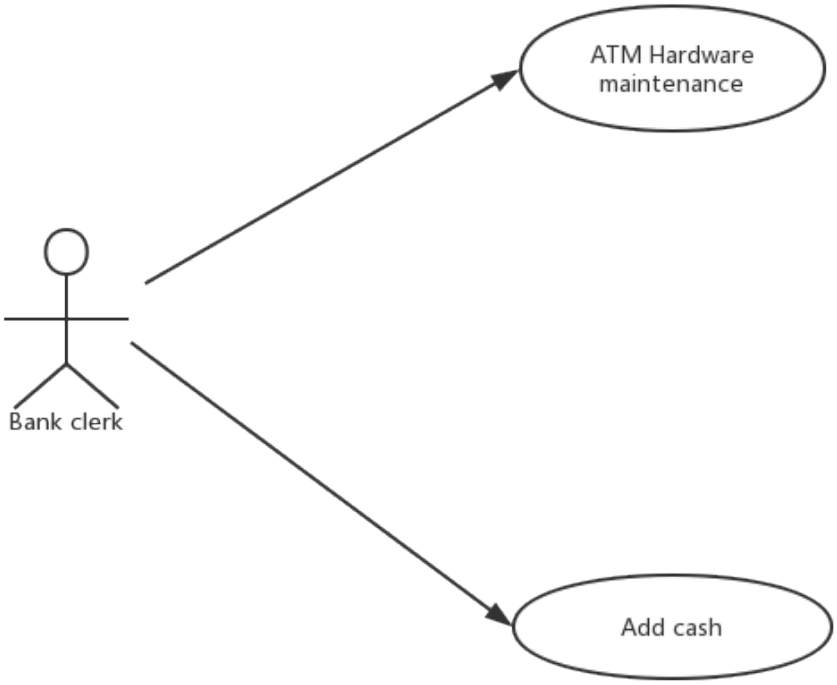
We set up two types of actor based on the requirements, one is a common user, the other is a bank clerk.

We set up two types of participants based on the requirements: the users and the staff.

For the user, we set 5 use cases: query, deposit, withdrawal, transfer, and password modification.

For the staff, we set 2 use cases: ATM hardware maintenance and add cash.


Query
Inquiry account balance
Print the receipt
<<include>>
Input amount of deposit
Deposit
<<extend>>
Query balance
Input amount of withdrawals
<<include>>
Print the receipt
Users
Withdraw
<<extend>>
Query balance
Input transfer information
Transfer
Enter old ciphers and new passwords
Modify the password


ATM Hardware maintenance
Bank clerk
Add cash

3. Activity diagram:

Component elements of an activity diagram

1) active state diagram 2) action state 3) action state constraints

4) action flow 5) the start node 6) terminate the node 7) object

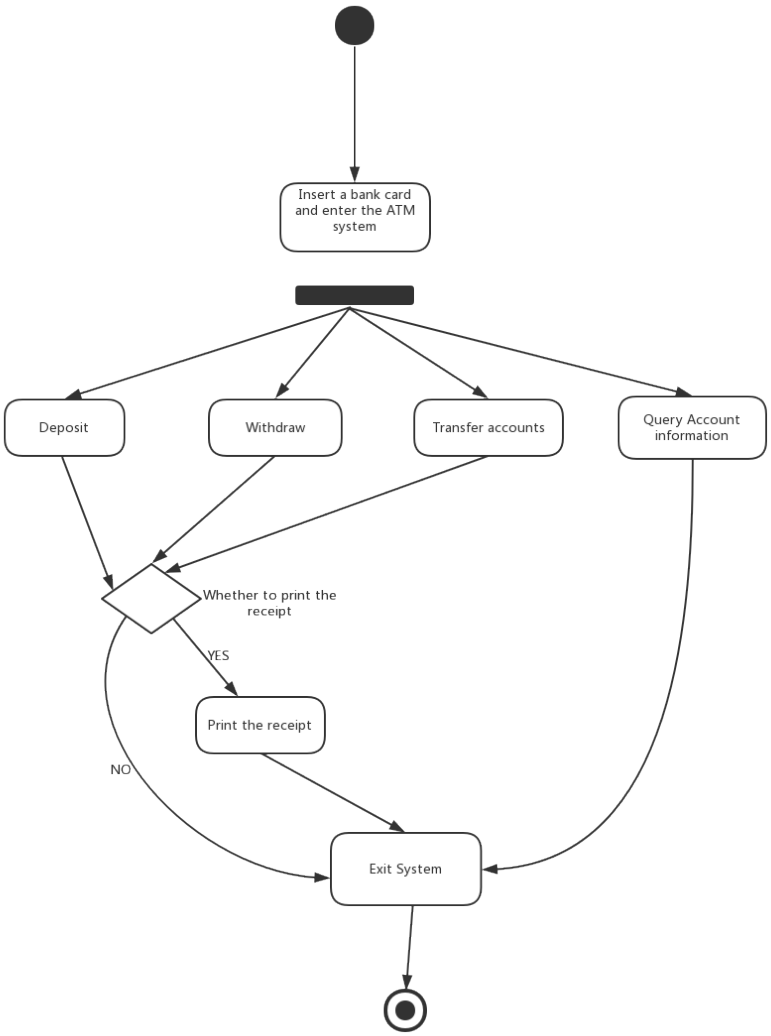
8) data storage object 9) object flow 10) branch and merge

11) bifurcation and convergence 12) exception handling

13) active interruption area 14) Lane

The Activity diagram Clarifies the Technological process of the business use case implementation.

The user insert a bank card and enter the ATM system.Then the user will go into a choice interface.The user can choose Deposit,Withdraw,Transfer accounts and Query Account information.If user choose Deposit operation,Withdraw or Transfer accounts.After the user finish these.The system will go to the next page:whether to print the receipt.At last,exit the system.



4. Collaboration diagram:

A collaboration diagram is an interactive graph that emphasizes the organization structure between the objects that send and receive messages. A collaboration diagram shows a series of objects and the connections between them, as well as messages sent and received between objects. Objects are usually instances of named or anonymous classes, and can also represent instances of other things, such as collaboration, components, and nodes. A collaboration diagram is used

to illustrate the dynamic situation of the system.

For the ATM system,the actor is user. The ATM UI, ATM system and Bank are objects.The user input correct password to go into the ATM UI.Then the users send their own requests through the ATM system on ATM UI.After these,the Bank will update the information about the account.