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Tiered Architecture Assignment

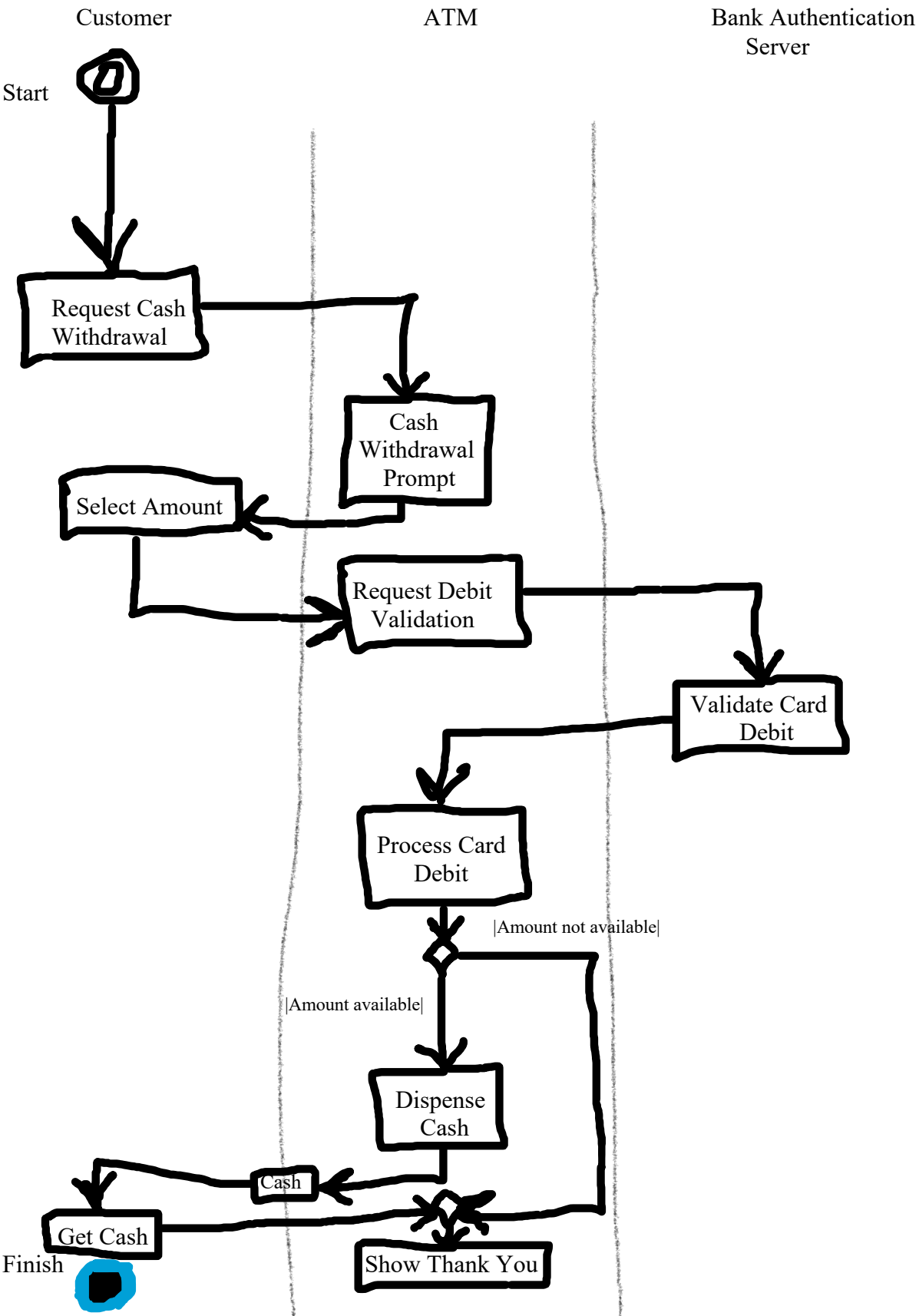
1. Explain why design conflicts might arise when designing an architecture for which both availability and security requirements are the most important non-functional requirements.

    - Typically, when we need to perpetuate the security in your system, we must act in accordance with the covered architecture in the system. When it comes to covered architecture, the important part is the internal coating as it must not become vulnerable. When it comes to availability, we must ensure that our system is setup and running every on every occasion. Due to this, we must supply the additional or unnecessary system to be able to ensure the availability when the system is in the process of being updated. We must ensure that the system is fortified in every instance, however this is not possible when we are restoring the elements of the system because of the usage of the unnecessary or additional elements. This could allure to the vulnerability of security. Do to all these reasons, we cannot always have both availability and security setup together at the same time. We need to settle for one or the other at a certain period. These are all reasons why design conflicts are likely to arise in designing an architecture while trying to set availability and security requirements simultaneously.

2. Suggest an architecture for a system (such as iTunes) that is used to sell and distribute music on the Internet. What architectural patterns are the basis for your proposed architecture?

    - The architecture that I would suggest for a system like iTunes is a client-server model. A system such as iTunes would consist of a database that contains data of all the music that is accessible through their system. The music data can be looked up by the singer's name, song name, genre, and so on, by way of a web constructed interface and downloaded for a certain cost. The server manages music purchases through the web constructed interface. The architectural pattern for my proposed architecture is the client-server pattern.

3. Based on your experience with a bank ATM, draw an activity diagram that models the data processing involved when a customer withdraws cash from the machine.


Customer
ATM
Bank Authentication Server
Start
Request Cash Withdrawal
Cash Withdrawal Prompt
Select Amount
Request Debit Validation
Validate Card Debit
Process Card Debit
|Amount not available|
|Amount available|
Dispense Cash
Cash
Get Cash
Finish
Show Thank You