Kyle Latimer

CS 255

Module 6 Assignment

A UML Activity diagram draws the activity flow of a system, it describes the sequence from one activity to another, and it can describe the parallel, branched, and concurrent flow of a particular system.  A sequence diagram depicts the interaction between objects in a sequential order. This would be the order in which these interactions take place. Once could also use the terms event diagrams or event scenarios to refer to a particular sequence diagram. Sequence diagrams are effective at describing how and in what order the objects in a system function.

Both the UML Activity diagram and the Sequence Diagrams are illustrating the use of an ATM. Both are effective at describing this process but do this by taking a subtly different approach. The Activity Diagram shows the user inputting a pin, and then a decision branch. The decision branch is whether or not the password was correct or not. After, the user can request an amount of money from the ATM. Once an amount is entered by the user, a decision branch determines if the specified amount is available or unavailable in the account. After, the cash is dispensed, then a receipt is generated, and then the receipt is printed for the customer.

The sequence diagram goes through a similar process. In the Sequence diagram, there are 3 actors, which are User, ATM, and the BANK. The USER 1st needs to enter their ATM card. The ATM responds to the USER by requesting a personal identification number or PIN. The User then responds and enters their Pin. After, the ATM sends a message to the BANK in order to validate the USER’S credentials. The BANK responds to this message, and validates whether or not the correct credentials were entered. If the credentials were validated, then the ATM asks the USER how much they would like to withdraw. The USER then enters the amount they would like to request from their account. After, the ATM dispenses the requested amount.

Two of the most apparent deficiencies in the diagrams are in the Sequence Diagram. For one, there is no branch if the USER incorrectly enters their pin, and the pin is incorrect. Another deficiency occurs when the USER enters the amount of cash they want. Unlike the Activity Diagram, the Sequence Diagram does not have a branch or response if the USER enters an amount that is above the amount that they have in their account.

Diagram

Description automatically generated