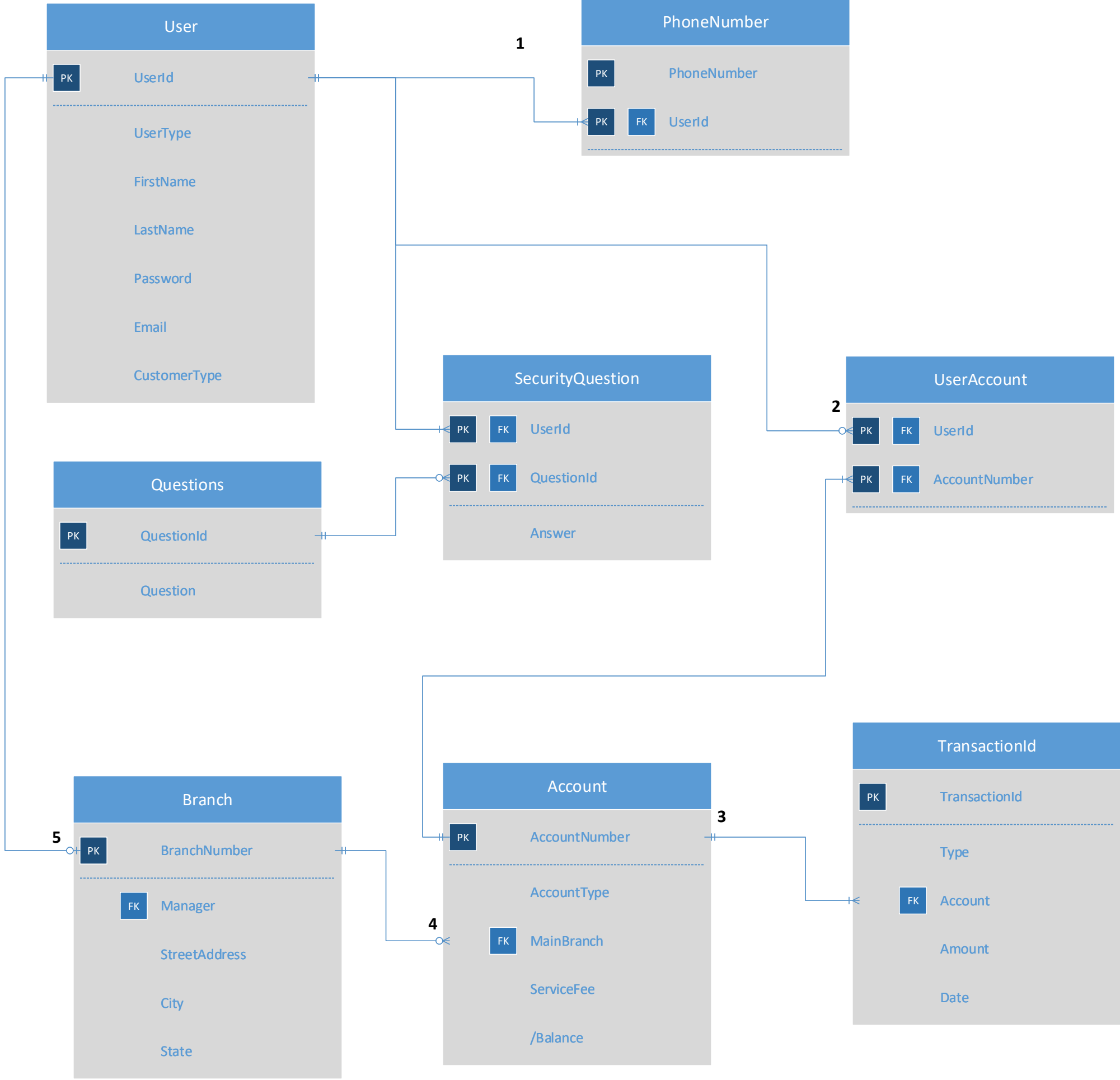


Well Money Bank  
Logical Database Design



Justifications

Email datatype size is based on the maximum size of an email address.

CustomerType checks have an extra character ‘N’, which will be used for employees without an account.

UserID doesn’t specify how the customers would like to identify them. I will assume that they will use a combination of numbers and characters. With this in mind, I have allocated 16 characters, which will yield roughly 3.5e44 unique IDs.

BranchNumber is given the data type SMALLINT, I did this because a TINYINT (255) seems a bit too small. I felt this data type was the best chose since we do not know how big Well Money Bank currently is or their projected growth.

Questions table was added. This was created to save memory in the data base. This will make it so Wells Money Bank can create a very long security question (2048 characters) and store it once instead of once per customers. This is done by relating the question with an ID number that will be store with each customer.

Balance in the Account table will be stored within the database and update after every transaction. This will be done so every transaction doesn’t need to be reapplied to the account to figure out the current/new balance, instead the last current or the newest transaction can be directly applied to the Balance.

Assumptions

- 1 A Phone Number is related to exactly one User:  
Phone numbers might not be unique but each phone entry is associated with exactly one customer.
- 2 A User is related to zero, one, or many Accounts  
A user can be in the system without an account.
- 3 Each Transaction (Deposit, Withdrawal, and Payment) is related to exactly one Account.  
It is not possible to do a transaction without specifying which account the money is to come from or go to.
- 4 A Branch can be related to zero, one, or many Accounts  
A branch can start with zero accounts.  
A branch can have many accounts.
- 5 An Employee can manage zero or one Branches  
Some employees are not managers.  
If an employee is a manager of one branch, they cannot be a manager of another branch.