MARMARA UNIVERSITY FACULTY OF ENGINEERING

COMPUTER ENGINEERING DEPARTMENT

CSE3055 Database Systems Project **STEP2**

CUSTOMER SIDE DATABASE FOR BANK

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Requirement Analysis for Entities

- Customer is the center entity for this project.
- Identifier for customer is customer id attribute, which is the primary key and can not be null, and should be unique for each entry.
- Customer has name composite attribute which includes name and surname.
- Customer entity has the phonenumber and thecomposite address information of customer.
- Account entity identified by account number information and account also has other attributes as follows: balance and account type. Balance attribute will keep the current amount of money in the account which is determined by account number and account type can be differ as deposit account or checking account etc.
- Bank entity identified by bank id, and it has phonenumber and e-mail address information.
- Branches identified by branch name and includes other attributes as branch id and branch city which indicates where this branch located.
- Card entity is identified by unique card number. Expire date and card type are the attributes for card entity.
- Debit card has primary key card type and it has withdraw limit for the with drawing some amount of money for a day.
- Credit card is also identified by card type. It has loan limit, current debt and minimum monthly payment amount as attributes.
- Transactions are identified by transaction number. Transaction type like payment, loan is an attribute for transaction. Another attribute is amount of the transaction.

Requirement Analysis for Relationships

- A customer can possess many accounts, and one or many accounts are possessed by one customer.
- A bank has many customers, one or many customer are customers of a bank.
- A bank may have many branches or not, but branches are included by a specific bank.
- A customer may have many cards, and one or many cards are owned by one customer.
- Credit Card and Debit Card are sub-types of Card entity. They have all entities that card entity has. Customer can have both of these cards, none of them or one of them.

Project Background

Banks do not share information about their company. That is why data set for this project is created randomly by the team members. We will implement an interface for our database, that will have buttons like add a new customer, update an information, delete a data or call some data about customer or bank to see. This program will be easy to use for bank worker who does not know anything about database systems. They will click on the 'Add new customer' button and a screen will appear then they will enter the requested information which are customer name, address, phone number and customer id will be assigned automatically behind. During bank worker do this process, in the background actually insert function will be called with that button, and the entered information will be the values for insert queue. Same process will be done for other operations like delete or update.

When the loan limit information of a customer asked, then this data will be accessed by in order of customer id, then card number, then credit card table's loan limit attribute. All tables are connected and have relationships.

The last user which is in this case the workers of bank, cannot see the actual database tables. That is only available for Data Warehouse engineers. However, they can call

some data by giving the identifier data values. Identifier is the way to access whole table for database systems. Updating and deleting a value should be done with considering that they can be copied or using in another tables like super/sub types. In that case the operation will be done with all the branches. Again it will be done without last user realizing.