# CS353 DATABASE SYSTEMS

## PROJECT PROPOSAL

## Banking Enterprise

# Group 8
# Section 2

## Members:
Aliye Begüm Akbay
Osman Hakan Can
Alim Şükrücan Gökkaya

**Project Website: http://54.84.106.48/**

## Project Description

The database that we plan to design for the bank will keep track of the information regarding the staff of the bank, the existing accounts and their corresponding customers as well as any kind of transactions or money transfers that they may participate in or loans they may take. The system mainly focuses on the complexity with regards to the account, customer and the interactions between them. Since such information are some of the most valuable both for customers and the bank. Based on this, the current design of the database has multiple relations between the account and the customer entities, some of which are non-binary (as it can be seen from our diagram). A customer may have multiple accounts and there are different types of accounts for the customer to choose from. This account can be a business account (named "business_account" in the E-R diagram), a savings account (named "saving_account"), or a regular, personal one (this is the "account" superclass). With an account customer can transfer money to a different account, take a loan, have transactions like withdrawing money from the account or pay bills. For each individual bill payment, a bill with a unique ID will be created and paid to its target. For certain types of transactions such as deposits, customer will use an ATM machine to get his/her money from.

Each customer can also have a credit card, or an account card that is associated with his/her account. With the help of these, customer can make payments in installments. Depending on the installment plan, these can be divided into multiple sub-installments. These payments then go to the relevant business account.

System also stores needed information about the staff, like what type of an employee they are (a clerk, customer assistant or a manager), which branch of the bank they work at, and their personal information. To mention the requirements and the limitations we set for the system (The E-R diagram is designed with these factors in mind):
- Each customer can have multiple accounts.
- It is not allowed for multiple customers to share a single account.
- A manager must have a greater salary than a customer assistant.
- A customer assistant must have a greater salary than a clerk.

- A clerk's salary can vary based on his/her title.
- A customer can have individual cards for their individual accounts.
- An account_card and credit_card can only be used until it's "valid_until" date.
- A transaction will be a deposit, a withdrawal or a check payment based on its "type".
- The bank does not necessarily have to have multiple branches, but it must have at least one.
- A bill, loan or a sub_installment has to be paid before its due date.
- A customer cannot take out more than the limit amount from a credit card at once.

# E/R Diagram