Lab 4
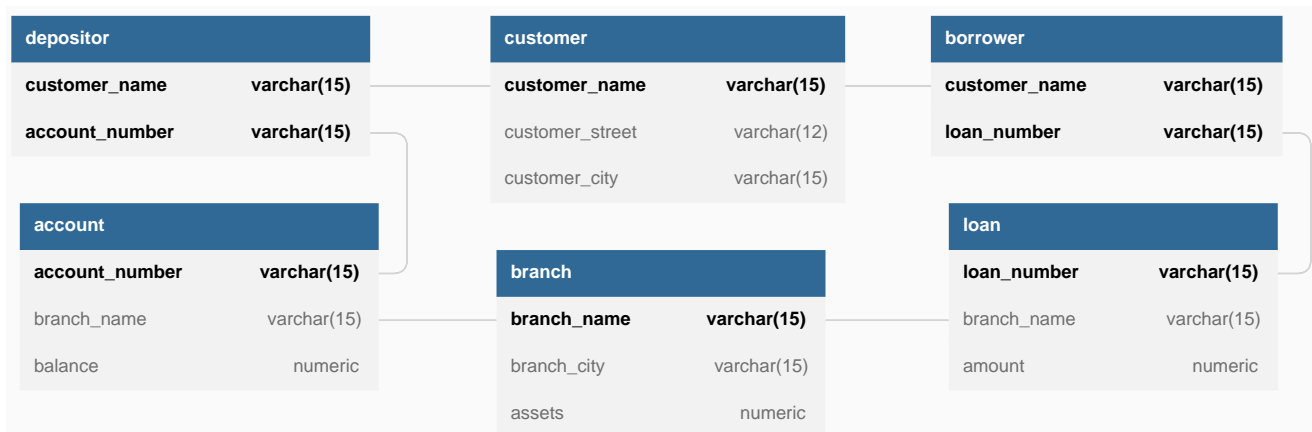# Advanced Data Manipulation

CSE 4308
DATABASE MANAGEMENT SYSTEMS LAB

Execute the `banking.sql` script using command. It creates a set of tables along with values that maintain the following schema:

depositor	
customer_name	varchar(15)
account_number	varchar(15)

account	
account_number	varchar(15)
branch_name	varchar(15)
balance	numeric

customer	
customer_name	varchar(15)
customer_street	varchar(12)
customer_city	varchar(15)

branch	
branch_name	varchar(15)
branch_city	varchar(15)
assets	numeric

borrower	
customer_name	varchar(15)
loan_number	varchar(15)

loan	
loan_number	varchar(15)
branch_name	varchar(15)
amount	numeric

Here, the boldfaces denote the primary keys and the arcs denote the foreign key relationships.

In this lab, you have to write all SQL statements in an editor first and save them with .sql extension. Then execute the SQL script.

Write SQL statements for the following queries:

1. Find all customer names who have an account as well as a loan (with and without 'intersect' clause).

2. Find all customer-related information who have an account or a loan (with and without 'union' clause).

3. Find all customer names and their cities who have a loan but not an account (with and without 'minus' clause).

4. Find the total assets of all branches.

5. Find the total number of accounts at each branch city.

6. Find the average balance of accounts at each branch and display them in descending order of average balance.

7. Find the total balance of accounts at each branch city.

8. Find the average loan amount at each branch. Do not include any branch which is located in 'Horseneck' city (with and without 'having' clause).

9. Find the customer name and account number of the account which has the highest balance (with and without 'all' clause).

10. Find all customer-related information who have an account in a branch, located in the same city as they live.

11. For each branch city, find the average amount of all the loans opened in a branch located in that branch city. Do not include any branch city in the result where the average amount of all loans opened in a branch located in that city is less than 1500. (with and without using 'having' clause).

12. Find those branch names which have a total account balance greater than the average total balance among all the branches.

13. Find the name of the customer who has at least one loan that can be paid off by his/her total balance.

14. Find the branch information for cities where at least one customer lives who do not have any account or any loans. The branch must have given some loans and has accounts opened by other customers.