

Supplementary Material for Lecture 9

Data Requirements for the Bank Database

By interviewing with the database users, major characteristics of the banking enterprise are as follows:

- The bank is organized into branches. Each branch is located in a particular city and is identified by a unique name. The bank monitors the assets of each branch.
- Bank customers are identified by their *customer_id* values. The bank stores each customer's name and the street and city where the customer lives. Customers may have accounts and can take out loans. A customer may be associated with a particular banker, who may act as a loan officer or personal banker for that customer.
- Bank employees are identified by their *employee_id* values. The bank administration stores the name and telephone number of each employee, the names of the employee's dependents, and the *employee_id* number of the employee's manager. The bank also keeps track of the employee's start date and, thus, length of employment.
- The bank offers two types of accounts—savings and checking accounts. Accounts can be held by more than one customer, and a customer can have more than one account. Each account is assigned a unique account number. The bank maintains a record of each account's balance and the most recent date on which the account was accessed by each customer holding the account.
- A loan originates at a particular branch and can be held by one or more customers. A loan is identified by a unique loan number. For each loan, the bank keeps track of the loan amount and the loan payments. Although a loan payment number does not uniquely identify a particular payment among those for all the bank's loans, a payment number does identify a particular payment for a specific loan. The date and amount are recorded for each payment.

Remark: In a real banking enterprise, the bank would keep track of deposits and withdrawals from savings and checking accounts, just as it keeps track of payments to loan account. Since the modeling requirements for that tracking are similar, and we would like to keep our example application small, we do not keep track of such deposits and withdrawals in our model.