CDBM 280 – ER Modeling

# In class exercises:

## Bank case

Design a database for a bank, including information about customers and their accounts. Information about customers includes their name, address, phone, and SIN. Information about accounts includes the number, type (chequing, savings, etc.), and balance. We need to track which customers have which accounts.

Create a simple ERD for each of these separate possibilities:

* An account can belong to only one customer but a customer can have many accounts
* A customer can have only one account but the account can be jointly held by several customers
* A customer can have many accounts and the account can be jointly held by several customers
* A customer can have a set of addresses and a set of phone numbers
* A customer can have a set of addresses and each address can have a set of phone numbers

## Library Catalog Case

Draw an entity relationship diagram for the following. Identify the entities, attributes and relationships.

A city ~~public library~~ has many branch libraries, each identified by a unique name. The city public library system has a single catalog of books shared by each branch library. Each catalogue entry describes basic information about some book – e.g. a unique call number, title, and author. In many instances, the library has many catalog copies of the same book located in different branch libraries and the circulation status of each copy is maintained. Patrons of the library acquire a unique ID card, with their name and address recorded. Each loan of any particular copy of a book is recorded with the due date in order to assess fines (do not model the fines, this is just a simple calculation based on the due date). A patron may borrow a book more than once.

## Model from a form

View the ACM Student Membership Application form here:   
<https://campus.acm.org/public/qj/quickjoin/qj_control.cfm?form_type=Student>

Based on this form, identify the possible entities, attributes and relationships that would apply to the system keeping track of student memberships and regular memberships.

\*\*Make the assumption that one address can be assigned to more than one person (ie: roommates, married couple, work address). Also assume that a member could, during their time as a member, be a student several times.