CSE 135

Discussion Section
ER Diagrams

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Fast pace of CSE 135

- Practice, practice, practice
  - Make use of the large number of online tutorials
  - Experiment with examples to understand basic concepts

- Ask questions
  - Clarify mechanical details over email and discussion section
  - Also ask questions about concepts and big picture
Outline

- Database server
  - Installing Postgresql
  - Using pgAdmin

- ER Diagrams

Installing Postgresql

- Install the Postgresql 8.4 database server
  - Choose an administrative password.
  - Ignore Stack Builder.
  - Check that your firewall blocks port 5432, so that you are the only one able to connect to the server.
Installing Postgresql

- Start the pgAdmin graphical client
  - Save the administrative password.
  - Right click on Postgresql 8.4, and select Connect
  - Right click on Databases, and select New Database
  - Enter a new name for the database, and click Okay
  - Highlight the database, and select Tools -> Query Tool
  - Write SQL code (or open the examples), and select Query
    -> Execute

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Example project description

- The bank has multiple branches
  - Branch: name, address, assets, ...

- The bank has many customers
  - Customer: name, address, ...

- Each customer can have arbitrarily many accounts
  - Account: account number, ...

- There are two types of accounts
  - Checking: overdraft amount, ...
  - Savings: interest rate, ...

- Each customer can apply for a loan from only one branch
  - Loan: amount, ...

Step 1: Identify entities and attributes

- Customers
  - Name
  - Address

- Loans
  - Amount

- Balance

- Accounts

- Branches
  - Name
  - Address
**Step 2: Identify relationships**

![Relationship Diagram]

**Step 3: Translate into SQL tables**

- For every entity, create corresponding table
  - Include an ID attribute even if not in E/R
- For every relationship, create table
  - For each referenced entity $E_i$ include foreign key attribute referencing ID of $E_i$