Extra slides, week 9

CSE 190 M (Web Programming) Spring 2008
University of Washington

References: SQL syntax reference, w3schools tutorial
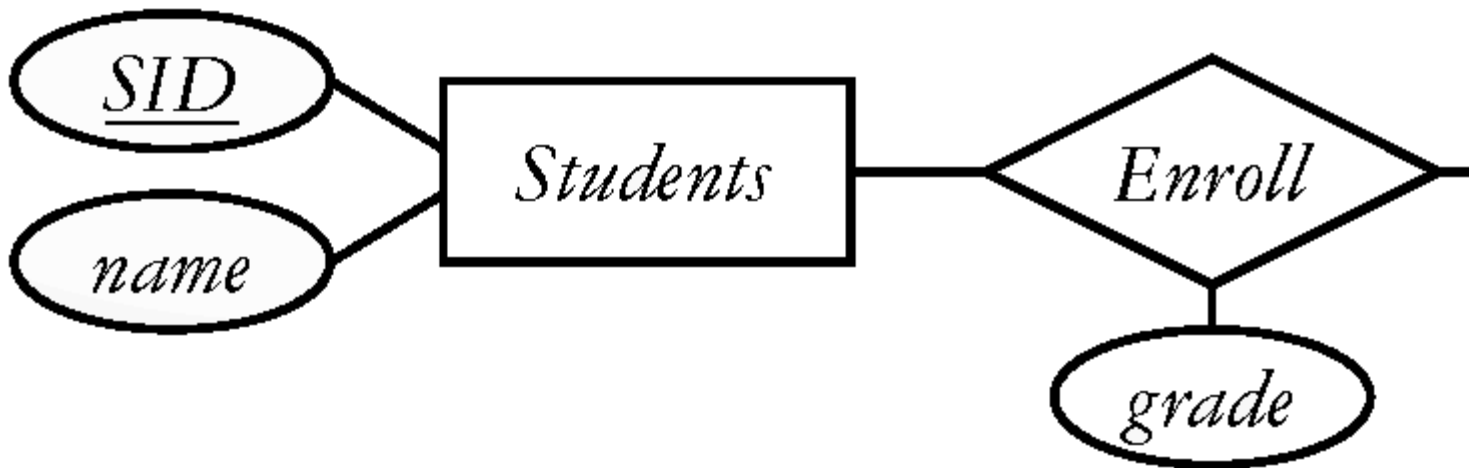
Entities and relationships

- an **entity** is a record in a table in the database
- a **relationship** is a connection between two or more entities
- database designers often draw **ER diagrams** like the above to represent the entities and relationships in their databases

The SQL `INSERT` statement

```sql
INSERT INTO table
VALUES (value, value, ..., value);
```

```sql
INSERT INTO Student
VALUES (789, "Nelson", "muntz@fox.com");
```

- adds a new row to the given table
- How would we record that Nelson took CSE 190M and got a D+ in it?

The SQL `UPDATE` statement

```sql
UPDATE table
SET column = value,
    ...,
    column = value
WHERE column = value;
```

```sql
UPDATE Student
SET    email = "lisasimpson@gmail.com"
WHERE  SID = 888;
```

- modifies an existing row(s) in a table

The SQL `CREATE TABLE` statement

```sql
CREATE TABLE name (
    columnName type constraints,
    ...
    columnName type constraints
);
```

```sql
CREATE TABLE Student (
    SID INTEGER UNSIGNED NOT NULL PRIMARY KEY,
    name VARCHAR(20),
    email VARCHAR(32)
);
```

- adds/deletes an entire new table from this database
- you can add constraints such as `NOT NULL` for a field that cannot be blank or `PRIMARY KEY` for a column that must be unique for every row
- related commands: `CREATE DATABASE`, `DROP TABLE`

SQL data types

- `BOOLEAN`
- `INTEGER`
- `DOUBLE`
- `VARCHAR` : a string
- `DATE, TIME, DATETIME`
- `BLOB` : binary data
- quick reference