SQL:
Data Manipulation Language

CSC343 Introduction to Databases

UNIVERSITY OF
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Schema: a kind of namespace

- "psql csc343h-DBuserID" connects you to a database called csc343h-DBuserID.
  (Substitute your cdf userid for DBuserID.)

- Everything defined (tables, types, etc.) goes into one big pot.

- Schemas let you create different namespaces.
  - Useful for logical organization, and for avoiding name clashes.

Creating a schema

- A default schema, called **`public`**, is available.

- One can create additional schemas:

```
create schema University;
```

- To refer to things inside a particular schema, use the dot notation:

```
create table University.Student (...);
select * from University.Student;
```

The search path

- The default search path is: "$user", public
  - schema `"$user"` is not created for you, but if you create it, it's at the front of the search path.
  - schema `public` is created for you.

- To see what the current search path is:

  show search_path;

- To set the search path:

  set search_path to University, public;

Removing a schema

- drop schema University cascade;

- "cascade" means everything inside, e.g., tables, triggers, indexes, etc., is also deleted.

- To avoid getting an error message if the schema does not exist, add "if exists".

```
drop schema if exists University cascade;
create schema University;
set search_path to University;
```

When you don't specify a schema

- If you do not specify a schema, any new things you define go in the schema called "public", e.g., if you create a table called `frindle`, you are actually defining `public.frindle`.

- NOTE: When referring to a name, there is a search path that finds it.

Workflow

- Create a DDL file/script with the schema.
- Create a file/script with insert commands to put content in the database.
- In the postgreSQL shell, import these files.
- Run queries directly in the shell, by importing queries written in files, or via a host language (more on this later).