SQL DDL

csc343, Introduction to Databases
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Schema: a kind of namespace

• “psql csc343h-miller” connects you to a database called csc343h-miller. (Substitute your cdf userid of course.)
• 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

- You already have a schema called “public”.
- You can also create your own. Example:
  
  ```sql
  create schema University;
  ```
- To refer to things inside a particular schema, you can use dot notation:
  
  ```sql
  create table University.Student (...);
  select * from University.Student;
  ```
When you don’t use dot notation

• If you refer to a name without specifying what schema it is within:
  • Any new names you define go in the schema called “public”
  • E.g., if you create a table called frindle, you actually are defining public.frindle.
  • When referring to a name, there is a search path that finds it.
The search path

- To see it the search path:
  ```
  show search_path;
  ```
- You can set the search path yourself. Example:
  ```
  set search_path to University, public;
  ```
- 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.
Removing a schema

- Easy:
  
  ```
  drop schema University cascade;
  ```

- "cascade" means everything inside it is dropped too.

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

• You can use this at the top of every DDL file:

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

• Helpful during development, when you may want to change the schema, or test queries under different conditions.
Workflow

• One effective way to work:
  • Create a DDL file with the schema.
  • Create a file with inserts to put content in the database.
  • In thepostgresql shell, import these.
  • Run queries directly in the shell or by importing queries written in files.