Week4 作业

题目一：

```sql
-- 题目一：第2次作业的题目三代码
SELECT DISTINCT T.name
FROM instructor AS T, instructor AS S
WHERE T.salary > S.salary AND S.dept_name = 'History';
```

运行结果如下：

name

题目二：

```sql
-- 题目二：使用三种方法找到所有以S开头的教师的名字
-- 1
SELECT name FROM instructor
WHERE name LIKE 'S%';
-- 2
SELECT name FROM instructor
WHERE name ~~ 'S%';
-- 3
SELECT name FROM instructor
WHERE name SIMILAR TO 'S%';
-- 4
SELECT name FROM instructor
WHERE name ~ '^S';  -- ~*不区分大小写
```

四种方法的运行结果都如下：

	name
1	Shuming
2	Sullivan
3	Soisalon-Soininen
4	Sarkar
5	Sakurai

题目三：

进入 psql 交互模式后，先从 postgres 数据库切换到 university 数据库，并检查 instructor 表是否存在：

```
SQL Shell (psql)

Server [localhost]:
Database [postgres]:
Port [5432]:
Username [postgres]:
用户 postgres 的口令:

psql (17.4)
输入 "help" 来获取帮助信息.

postgres=# \c university
您现在已经连接到数据库 "university",用户 "postgres".
university=# \d instructor
                    数据表 "public.instructor"
   栏位    |         类型          | 校对规则 |  可空的  | 预设
-----------+-----------------------+----------+----------+------
 id        | character varying(5)  |          | not null |
 name      | character varying(20) |          | not null |
 dept_name | character varying(20) |          |          |
 salary    | numeric(8,2)          |          |          |
索引:
    "instructor_pkey" PRIMARY KEY, btree (id)
检查约束限制
    "instructor_salary_check" CHECK (salary > 29000::numeric)
外部键(FK)限制:
    "instructor_dept_name_fkey" FOREIGN KEY (dept_name) REFERENCES department(dept_name) ON DELETE SET NULL
由引用:
    TABLE "advisor" CONSTRAINT "advisor_i_id_fkey" FOREIGN KEY (i_id) REFERENCES instructor(id) ON DELETE SET NULL
    TABLE "teaches" CONSTRAINT "teaches_id_fkey" FOREIGN KEY (id) REFERENCES instructor(id) ON DELETE CASCADE
```

使用四种方法实现题目二：

```
university=# SELECT name FROM instructor
university-# WHERE name LIKE 'S%';
       name
--------------------
 Shuming
 Sullivan
 Soisalon-Soininen
 Sarkar
 Sakurai
(5 行记录)


university=# SELECT name FROM instructor
university-# WHERE name ~~ 'S%';
       name
--------------------
 Shuming
 Sullivan
 Soisalon-Soininen
 Sarkar
 Sakurai
(5 行记录)
```

```
university=# SELECT name FROM instructor
university-# WHERE name ~ '^S';
       name
--------------------
 Shuming
 Sullivan
 Soisalon-Soininen
 Sarkar
 Sakurai
(5 行记录)


university=# SELECT name FROM instructor
university-# WHERE name SIMILAR TO 'S%';
       name
--------------------
 Shuming
 Sullivan
 Soisalon-Soininen
 Sarkar
 Sakurai
(5 行记录)
```

列出所有的数据库：

```
university=# psql -U postgres
university-# \l
                                                  数据库列表
    名称     |  拥有者  | 字元编码 | Locale Provider | 校对规则 | Ctype | Locale | ICU Rules |       存取权限
-------------+----------+----------+-----------------+----------+-------+--------+-----------+-----------------------
 mydb        | postgres | UTF8     | libc            | zh-CN    | zh-CN |        |           |
 postgres    | postgres | UTF8     | libc            | zh-CN    | zh-CN |        |           |
 template0   | postgres | UTF8     | libc            | zh-CN    | zh-CN |        |           | =c/postgres          +
             |          |          |                 |          |       |        |           | postgres=CTc/postgres
 template1   | postgres | UTF8     | libc            | zh-CN    | zh-CN |        |           | =c/postgres          +
             |          |          |                 |          |       |        |           | postgres=CTc/postgres
 university  | postgres | UTF8     | libc            | zh-CN    | zh-CN |        |           |
(5 行记录)
```

列出当前数据库的所有表：

```
university-# \dt
                关联列表
 架构模式 |    名称    |  类型  |  拥有者
----------+------------+--------+----------
 public   | advisor    | 数据表 | postgres
 public   | classroom  | 数据表 | postgres
 public   | course     | 数据表 | postgres
 public   | department | 数据表 | postgres
 public   | instructor | 数据表 | postgres
 public   | prereq     | 数据表 | postgres
 public   | section    | 数据表 | postgres
 public   | student    | 数据表 | postgres
 public   | takes      | 数据表 | postgres
 public   | teaches    | 数据表 | postgres
 public   | time_slot  | 数据表 | postgres
(11 行记录)
```

显示表 instructor 的关系模式如下：

```
university-# \d instructor
                数据表 "public.instructor"
   栏位    |         类型          | 校对规则 |  可空的  | 预设
-----------+-----------------------+----------+----------+------
 id        | character varying(5)  |          | not null |
 name      | character varying(20) |          | not null |
 dept_name | character varying(20) |          |          |
 salary    | numeric(8,2)          |          |          |
索引：
    "instructor_pkey" PRIMARY KEY, btree (id)
检查约束限制
    "instructor_salary_check" CHECK (salary > 29000::numeric)
外部键(FK)限制：
    "instructor_dept_name_fkey" FOREIGN KEY (dept_name) REFERENCES department(dept_name) ON DELETE SET NULL
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    TABLE "advisor" CONSTRAINT "advisor_i_id_fkey" FOREIGN KEY (i_id) REFERENCES instructor(id) ON DELETE SET NULL
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```