

CSE 180: Lab Section

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- Canvas
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- Copying files to the server
- Playing with Postgres SQL



Monday, October 2nd
Utkarsh Gupta

Course Information

- Piazza: <https://piazza.com/class/lmqm0xueqm0574>
- Canvas: It is all ready!
- General Resources and Syllabus will be there in Piazza as well as in Canvas
- Slides, Announcements, Lab Assignments, and Solutions will be posted on Piazza.



Gradiance

- Automatically graded assignments.
- Unlimited attempts
- <http://www.gradiance.com/services>
- Class Token: **9525FB87**
- REMEMBER: Last score of the assignment is the final score



Utkarsh

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Help

Gradiance Online Accelerated Learning

Welcome to CSE180 Fall 2023

Class Token: 9525FB87; Current Enrollment: 63

- Click Handouts to create handouts for your class.
- Click Tutorials to find existing tutorials (including those already set up by Gradiance), assign existing tutorials to your class, or create new tutorials.
- Click Homeworks to find existing homeworks (including those already set up by Gradiance), assign existing homeworks to your class, or create new homeworks.
- Click Lab Projects to find existing lab projects (already set up by Gradiance) and/or assign them to your class.
- Click Reports to generate reports on student activity (e.g., class score report).
- Click Class Administration to perform administrative tasks like setting up a TA, adjusting student scores, accessing class roster etc.
- Click Question Bank to find available questions and/or create new questions.

Canvas

- Will be used for submissions, grading, exams, and recordings.
- Visit canvas.ucsc.edu to access the course
- Grading issues will be addressed by the TAs.
- In case of disagreement with the TA, issue will be addressed by Professor.
- **DO NOT** contact readers for the grading issues.



Working with the Unix timeshare machine

(For Mac and Linux users)

- Instructions to connect to the server can be found here:
 - <https://its.ucsc.edu/unix-timeshare/tutorials/how-to-connect.html>
- SSH Command:
 - `ssh <user_id>@unix.ucsc.edu`
 - `ssh sammyslug@unix.ucsc.edu`
 - Use your Blue Password to log in

```
Last login: Sun Jan  8 11:04:49 2023 from c-73-222-192-189.hsd1.ca.comcast.net
=====
*                                     *
*               Welcome to the Learning Technologies Timeshare!               *
*                                     *
*   Need help? Have a question? Something isn't working? We're here for you!   *
*   Email us at help@ucsc.edu, call us at 459-HELP (459-4357) or open a        *
*   support ticket at https://slughub.ucsc.edu                                *
*                                     *
*   Welcome to, or back to, UCSC! We hope you had a relaxing summer and are    *
*   ready for fall quarter! Not a lot of changes on the timeshare this         *
*   quarter. Some minor patching and a few program updates, but that's it.     *
*   There are plans to migrate the Linux environment (starting with BE 105)    *
*   over to something more modern. More information about that in the coming   *
*   weeks. In the meantime, we hope you have a wonderful quarter!             *
*                                     *
*   For COVID-19 resources and policies visit https://slugstrong.ucsc.edu      *
*                                     *
=====
You are currently using 15% (156.9 MiB) of your 1.0 GiB quota.
-bash-4.2$ █
```

Working with the Unix timeshare machine

(For Windows users)

- First method: Install PuTTY
 - <https://www.youtube.com/watch?v=pWDHUIvcAsg>
- Second method: Install OpenSSH client in windows
 - <https://www.youtube.com/watch?v=g2I6en4Mdjo>
 - Open Windows Powershell and run the following commands:
 - **ssh sammyslugh@unix.ucsc.edu**
 - Use your blue password to log in

```
Last login: Sun Jan  8 11:04:49 2023 from c-73-222-192-189.hsd1.ca.comcast.net
=====
*                                     *
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*                                     *
=====
You are currently using 15% (156.9 MiB) of your 1.0 GiB quota.
-bash-4.2$ █
```

Copying files to and from the UNIX server

- **METHOD 1: scp** is the easiest option
- Copy a single file to the UNIX server:
 - `scp <single_file_in_your_local> sammyslug@unix.ucsc.edu:<path_in_the_server>`
 - **`scp file.sql sammyslug@unix.ucsc.edu:~/CSE_180/setup/`**
- Copy a directory to the UNIX server
 - `scp -r <directory_path_in_your_local> sammyslug@unix.ucsc.edu:~/CSE_180/setup`
- Copy a file from the UNIX server:
 - `scp sammyslug@unix.ucsc.edu:<path_in_the_server> <single_file_in_your_local>`
 - **`scp sammyslug@unix.ucsc.edu:~/CSE_180/setup/file.sql file.sql`**
- Copy a directory from the UNIX server:
 - `scp -r sammyslug@unix.ucsc.edu:~/CSE_180/setup ./setup`

Copying files to and from the UNIX server

- **METHOD 2:** rsync
- Copy a single file to the UNIX server:
 - `rsync file.sql sammyslug@unix.ucsc.edu:~/CSE_180/setup/BeerScriptsRI/file.sql`
- Copy a directory to the UNIX server
 - `rsync -a directory_name sammyslug@unix.ucsc.edu:~/CSE_180/setup/`
- Copying a file and directory is same as we saw in **scp**

Copying files to and from the UNIX server

- **METHOD 2: GUI**
- Use FileZilla
 - <https://www.youtube.com/watch?v=adxmlHDim6c>
- Personally, I don't want you to use a GUI for transferring files.

Zippping/Unzipping a directory

- To submit your lab assignments, you need to zip your directory that contains your solution files.
- Run the following command to zip the contents of a directory:
 - **`zip -r filename.zip directory_you_want_to_zip`**
- Run the following command to unzip the contents:
 - **`unzip -q filename.zip`**

Postgre SQL

- Documentation: <https://www.postgresql.org/>
- Open Source, Relational Database
- Class server: **cse180-db.lt.ucsc.edu**
- Login to Postgre SQL with the following command
 - `psql -h cse180-db.lt.ucsc.edu -U <username>`
- Change Password
 - `ALTER ROLE <username> WITH PASSWORD 'newpassword';`
- **\password** command can also change the password

Postgre SQL

- **Schema**
- A schema is a collection of tables, and other named objects.
- With the help of schemas:
 - You can have multiple sets of tables in the same database
 - Ensure that there is no collision
- **CREATE SCHEMA LAB1;**

Postgre SQL (continued)

- `\?` : List all the Postgres SQL commands
- `\h` : SQL command help
- `\dt` : Show available tables
- `\d table_name` : Describes the table table_name
- `\du` : Describes users/roles
- `\dn` : List all schemas
- `\password:` changes the password
- `\i filename.sql` : Runs a file

Case doesn't matter, unless specified within quotes "".

Uppercase is used to maintain readability.

Postgre SQL (continued)

Beers

beer	manf
Coors	Adolph Coors
Coors Lite	Adolph Coors
Miller Lite	Miller Brewing
Miller	Miller Brewing
MGD	Miller Brewing
Bud	Anheuser-Busch
Bud Lite	Anheuser-Busch
Michelob	Anheuser-Busch
Anchor Steam	Anchor Brewing

Bars

bar	addr	license
Joes	123 Any Street	B7462A
Sues	456 My Way	C5473S

Sells

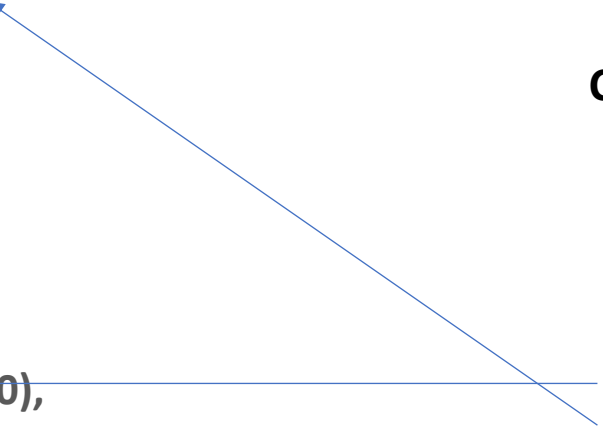
bar	beer	price
Joes	test	2.5
Joes	Bud	2.5
Joes	Bud Lite	2.5
Joes	Michelob	2.5
Joes	Anchor Steam	3.5
Sues	Coors	2
Sues	Miller	2

Postgre SQL (continued)

```
CREATE TABLE Beers (  
    beer VARCHAR(30),  
    manf VARCHAR(50),  
    PRIMARY KEY (beer)  
);
```

```
CREATE TABLE Bars (  
    bar_name VARCHAR(30),  
    addr VARCHAR(50),  
    license VARCHAR(50),  
    PRIMARY KEY (bar)  
);
```

```
CREATE TABLE Sells (  
    bar VARCHAR(30),  
    beer VARCHAR(30),  
    price REAL,  
    PRIMARY KEY (bar, beer),  
    FOREIGN KEY (bar) REFERENCES Bars (bar_name),  
    FOREIGN KEY (beer) REFERENCES Beers (beer)  
);
```



Postgre SQL (continued)

- **Search Path**

- It defines the order of schemas to search your tables.
- Example:
 - "\$user",public
 - lab1,lab2,lab3,public
- `select * from bars;`
 - Does lab1 has bars? No
 - Does lab2 has bars? No
 - Does lab3 has bars? Yes -> Then use it!
 - public schema also has bars; But that doesn't matter
- `set search_path to lab1,lab2,lab3,public;`