

INSTALLPALOZA GUIDE

PGADMIN & POSTGRES, ORACLE 12C, ORACLE SQL DEVELOPER, AMAZON REDSHIFT, SUBLIME Text Editor, ANACONDA(optional), GitHub

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INTRO

Getting installs set up before class should help with smoother transitions as we move from one subject to another.

There are many options when starting to learn or working with SQL

MySQL, SQLite, SQL Server, Oracle, PostgreSQL

AMAZON REDSHIFT (Postgres)

Microsoft Azure (SQL Server)

We will have a heavy focus on Postgres with some cross training into Oracle. It is advised that you are familiar with both and to continue your education with these tools as well as become familiar with cloud based platforms like AMAZON Redshift, Microsoft Azure and work with MySQL.

It may seem like a lot and when setting up all of your installs it can feel overwhelming, however, after all of your installs and configurations are done, you will find most of the difference between these tools or dialects of SQL to be tolerable.

If you are ever stuck on your installs or just want to practice you can easily jump into <http://www.sqlfiddle.com/> and practice any dialect of SQL for free online. However for class you will want to be sure and work through the install guide. Sqfiddle is great when maybe you do not have admin privileges at work but have time to practice.

Before going into Installation take note that you may be running code or going into command line to put in code that is out of scope for this class, this is to mainly get your applications up and configured so that we can run SQL that is relevant for a Business or Data Analyst.

I find it best when doing installs to block out a solid amount of time and be prepared to hunt through google for troubleshooting, uninstall and try again. You will get it set up and once you do it does get better.

For starters there are typically 2 parts to an install, the database and the Query editor or database viewer. The database itself can take the longest to install and not show much for it, it kind of sits there in the background. Next is the Query editor, installing this is going to be more about Configure its connection to the database. Once this is set up you are ready to go with navigating your database and learning SQL.

I have attempted to put a range of time it will take to install it's an average some people have no issues and install faster, some people have a lot of troubleshooting and can take longer.

Do not attempt this on work laptops or computers. They are typically locked down and you will run into areas that cannot be fixed without admin rights.

PostGres and PGAdmin INSTALL (estimated time 1 to 3 hours)

PostgreSQL (pronounced "post-gress-Q-L") is an open source relational database management system (DBMS) developed by a worldwide team of volunteers.**PostgreSQL** is not controlled by any corporation or other private entity and the source code is available free of charge.

pgAdmin open source administration development platform for PostgreSQL it is the Query Editor we will be using.

Postgres is how and where your data is stored, PgAdmin is a Viewer into Postgres to maintain the database or retrieve data.

DOWNLOADING PGADMIN

Because we will be working from the latest version(updates are frequent).The product can be buggy at times or there may be some GUI discoveries made in class by both you and instructor. PGADMIN is aggressive with development so it is difficult to test and refresh GUI content at the same rate they update there app.

You may need to reboot the program or even your device at times or you and your instructor may need to book some troubleshooting time out of class to resolve any issues. Having a lot of programs running on your device will decrease performance. Using a work computer may make it difficult or impossible to use PGAdmin.

After Pgadmin is loaded we will connect to AWS and then to our own servers.

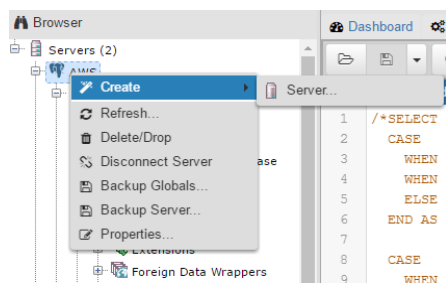
Download the latest version of PgAdmin for your device. The link may change but a simple google of Pgadmin download should direct you to their latest location <https://www.pgadmin.org/download/>

The download is typically an executable file. .exe or mac .dmg it is also going to be the largest file.

Once you have downloaded PgAdmin you are ready to connect the SQL Editor to AWS.

Connecting to AWS

1. Open Pgadmin
2. Locate the Browser pane
3. Right click on the Server Icon
4. Choose Create
5. Click on Server
 - Because of updates some of these images may not be fully accurate.



6. Give your connection to AWS a name, recommendation....AWS

The screenshot shows the 'Server - AWS' dialog box with the 'General' tab selected. The 'Name' field contains 'AWS'. The 'Server group' dropdown menu is set to 'Servers'. The 'Comments' field is empty. At the bottom, there are buttons for 'Save', 'Cancel', and 'Reset'.

7. Click on the Connections tab.
8. In the connection tab fill in the following.

Host name/address: [Analyticsga.cuwj8wuu6wbh.us-west-2.rds.amazonaws.com](https://analyticsga.cuwj8wuu6wbh.us-west-2.rds.amazonaws.com)

Port: 5432

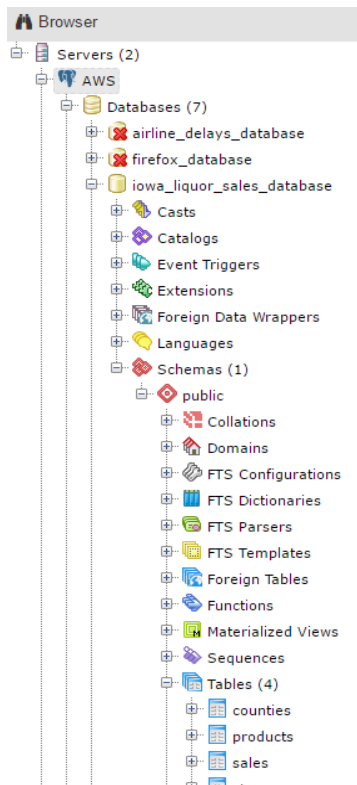
Maintenance: postgres

User name: analytics_student

Your password for AWS is [analyticsga](#)

The screenshot shows the 'Server - AWS' dialog box with the 'Connection' tab selected. The 'Host name/address' field contains 'analyticsga.cuwj8wuu6wbh.us-west-2.rds.amazonaws.com'. The 'Port' field contains '5432'. The 'Maintenance database' field contains 'postgres'. The 'User name' field contains 'analytics_student'. The 'Role' field is empty. The 'SSL mode' dropdown menu is set to 'Prefer'. At the bottom, there are buttons for 'Save', 'Cancel', and 'Reset'.

9. Save your connection and explore AWS. See if you can Navigate through the Browser and find tables for Iowa liquor sales.



DOWNLOADING POSTGRES

This will be your own local relational database management server(RDBMS).

<https://www.postgresql.org/>

You will be asked to Create a password. Write this password down. you will need it to connect to your database.

When asked what applications you would like installed, check all except Registration required add-ons and add-on that require payment.

Also you may have some already installed, ie Postgres will already be installed.

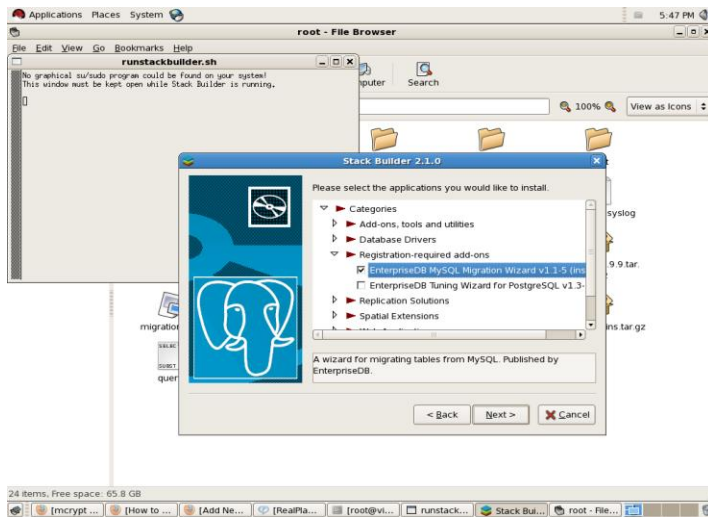
This can take up to 40 min. Some installs may fail and that is OK.

You will continue to be prompted to install each add-on

We won't need these add ons for class but you may want them as you further your understanding of data and databases.

To choose add ons click on the drop down arrows.

*this snippet may look different from yours. It has Registration add-ons checked and you do not need these.



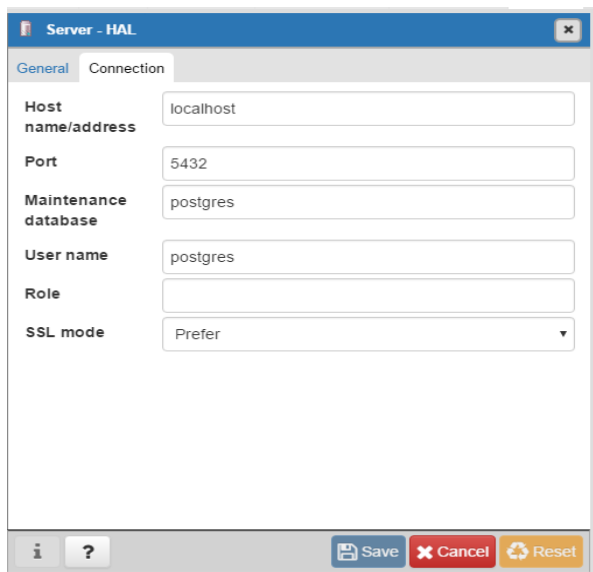
Connecting to localhost

Once you all installed you are ready to connect to your database using pgAdmin

1. Open pgAdmin4
2. Create a new server connection
3. Name your connection whatever you like.

Here are the properties for your connection.

Remember the Password you created? You will need that now.



TESTING DATA CONNECTION

1. Once you have a data set that you want you will need to first open the SQL Editor within PgAdmin.
2. Right Click on you're the Server you created. It should be an icon in your Browser pane.
3. Click on create Database
4. Name your database and save
5. Navigate to schemas in your new database
6. Right click on public
7. Choose Query tool.
8. TYPE
 - a. CREATE TABLE test(f_name char(25);
 - b. INSERT INTO test('anyname');
 - c. SELECT * FROM test;

If you receive any error messages log them for troubleshooting. See how much trouble shooting you can accomplish with Google and or sites like stackoverflow.

COMMON Troubleshooting!

If you get permissions errors first check to make sure you have the file selected and not just the folder. Then try this method.

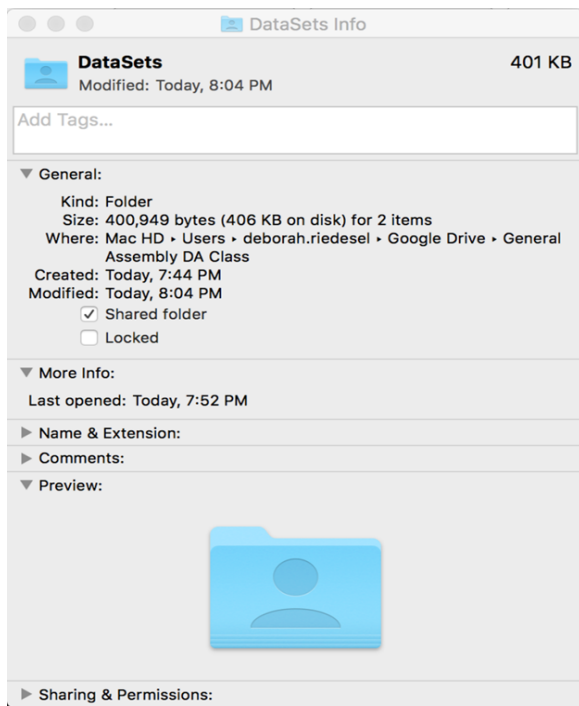
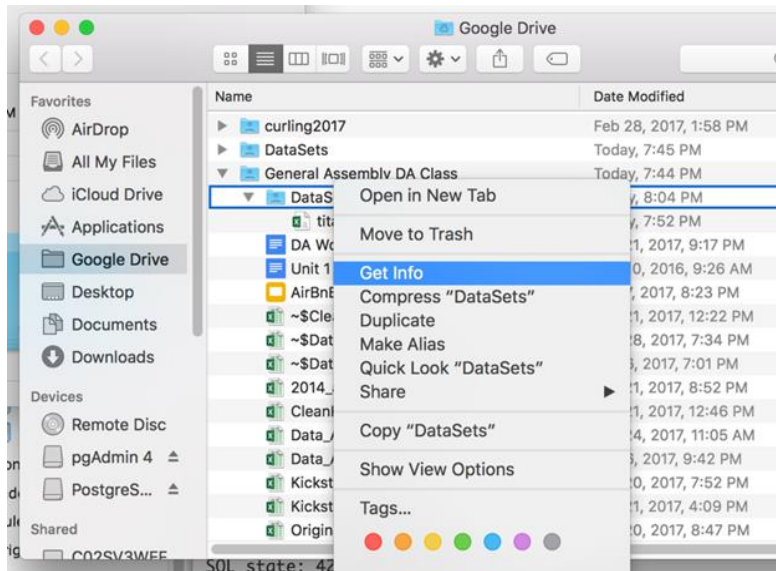
- Right click the folder containing the data file(s) that permission was denied to and then click **Properties**.
- In the Folder's Properties window, select the **Security** tab.
- Click the **Edit** button.
- In the "Permissions for the folder" window that opened, click the **Add...** button.
- Type **Everyone** into the "Enter the object names to select" text area box.
- Click **OK** and the window will close.
- Verify that the default **Read & Execute** permissions were set to **Allow** via the check checkbox in the previous window.
- Click **OK** and the window will close.
- Click the **Apply** button in the Folder Properties window.

Now you can run the SQL COPY statement that needs to access those files.

- Once done, return to the Folder's Properties window.
- Click the **Edit** button.
- Select the **Everyone** entry in the "Group or user names:" field.
- Click the **Remove** button.
- Click **OK** on the remaining open windows.

The permissions have now been returned to what they were.

MAC USERS



INSTALL ORACLE (2-6hrs)

This doc is designed to assist with the installation, configuration and the setting up of a user profile for Oracle and Oracle SQL developer. ORACLE 12C is the Database and Oracle SQL developer is the viewer that can be used to navigate the database. You may also choose to use SQLPLus(command line shell). This install will require some Command line code. If you have had any instances of oracle set up in the past and they are not in use you will want to fully uninstall before beginning, if you are not sure that means you probably don't have any running.

- 1) <https://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html>
 - a. Oracle.com
 - b. Find and select Downloads >Database> Oracle Database
 - Oracle may update their website but the above should give you a guide on how to find the correct download
- 2) Accept License Agreement
- 3) Download Oracle 12c Release 2
- 4) You will be taken to a page to create an oracle account or to use an existing account
 - a. Once logged in oracle will begin downloading
- 5) Unzip, Extract or navigate to folder and move to any location
- 6) Open database folder> Right click on Setup>Run as administrator
- 7) There are 10 steps
 - a. Configure Security Updates
 - i. You do not need to enter an email address
 - ii. You can uncheck security updates
 - iii. You will receive a popup that looks like an error but it is just a confirmation message.
 - b. Installation Option
 - i. Make sure Create and configure a database is checked
 - c. System Class
 - i. Choose Desktop class
 - d. Oracle Home User
 - i. Use Virtual Account
 - e. Typical Installation
 - i. Click drop down arrow > Standard Edition
 - ii. Enter an easy to remember password Oracle
 1. If you do not adhere to oracle password rules you may get an error message but you can ignore it and stick with your basic password. You will want this to be an easy one to remember as you will need it to get into your database and resetting or finding your password is difficult.
 - a. Oracle standards password rules:
https://docs.oracle.com/cd/E12547_01/books/SalesComV2.0/index.htm?toc.htm?AboutPasswordRuleshelp.html
 - f. Prerequisite Checks are done
 - i. If you get Failed status you will need to review the failure for any help on Oracle help, Stack overflow or Google. If you are still stuck you can book time with course instructor to troubleshoot configuration together. Because of time constraints if you have at least Postgres, Oracle, you may need to troubleshoot throughout class or come back to it after class.
- 8) After reviewing; Summary , Install Product and Finish, click Close.
- 9) TEST install is successful

- a. Open Command Prompt
- b. Type `sqlplus system C:\Users\Matthew>sqlplus system`
- c. Enter the password you created when installing oracle
- d. You should now see the SQL prompt you have connected!

10) If you have forgotten your password.

- a. From the command line type.
 - i. `Sqlplus /nolog`
 1. `C:\Users\Matthew>sqlplus /nolog`
 - ii. Connect `SYS/SYS_password AS SYSDBA`
 1. `SQL> SYS/SYS_password AS SYSDBA`
 - iii. `ALTER USER account IDENTIFIED BY new_password ACCOUNT UNLOCK;`
 1. `ALTER USER student IDENTIFIED BY training ACCOUNT UNLOCK;`

SQL ORACLE DEVELOPER Connection and Troubleshooting

- 1) From Desktop or Start Prompt navigate to SQL ORACLE DEVELOPER and select it.
- 2) Uncheck Allow automated usage reporting to Oracle
- 3) Tools > Preferences>Database>Worksheet
 - a. Check box for Grid in checker board or Zebra pattern
 - b. Browse and Select default path for scripts
 - a. Documents>Scripts>Oracle
- 4) Connect to the Oracle Database
 - a. For purposes of this course we will be keeping it simple
 - i. Right click Connections
 - ii. Create Local Connections
 - b. Click on the Green +
 - c. A configuration prompt will pop up
 - d. Connection name can be anything you want, recommend "*name@SID*" so *PAT@ORCL*
 - e. User name and password will be from your configuration Setup
Test your connection if successful You may skip troubleshooting steps
- 5) Troubleshooting
 - a. Password reset will be the same as Step 10 from install Oracle
 - b. Nothing is working
 - i. Close oracle SQL developer
 - ii. In start menu type RUN
 - iii. In run command line type services.msc
 1. Right click on any instance of ORACLE and choose start.
 - iv. Try running Oracle Developer again.
 - c. Network Adapter could not Establish a Connection
 - i. This usually means you Hostname, Port or SID set up incorrectly
 - ii. You will need to locate 2 files listener.ora and tnsnames.ora
 1. C:\app\Matthew\virtual\product\12.2.0\dbhome_2\network\admin
 - a. C:\app\username\product\version\dbhome_2\admin
 - iii. Right click and edit or open listener.ora with notepad
 1. Take note of Hostname and Port
 - iv. Right click and edit or open
 1. Take note of Database names and find orcl or the name you gave your database.
 2. Take note of hostname and port
 - v. Make sure your Hostname Port and SID are set up the same.
 - d. ORA-12505 TNS:Listener does not currently know SID given
 - i. Port number might be correct but SID name is wrong
 - ii. Review all steps in Network Adapter could not Establish a Connection
 - iii. Update SID

SETTING UP A TRAINING PROFILE AND TESTING IT

We are currently connected to ORACLE using SYSTEM privileges Let's reduce those privileges. Then we will Create a user and grant privileges.

We will not need to see all of the tables available that a System admin will see.

It will help us organize and filter to only what is important to us.

- 1) From command line type
 - a. ALTER SESSION SET "_oracle_script"=TRUE;
 - i. Hit ENTER
 - b. CREATE USER *username* IDENTIFIED BY *password*;
 - i. Hit Enter
 - c. GRANT CONNECT, RESOURCE to *username*
 - d. GRANT UNLIMITED TABLESPACE TO *username*;

Test your privileges are set up correctly

- 1) Open oracle SQL developer sign in to your new profile *not the SYSTEM profile
- 2) In the SQL blank Canvas (Query window) Type:
 - a. CREATE TABLE test(First_Name CHARACTER(25));
 - b. Using Curser highlight what you have typed and click on the Green arrow doc button(run script) or press F5, in future this instruction will just say "Run"
 - c. If you receive an error log the error for trouble shooting if not continue to next step.
 - d. In the same Canvas TYPE(INSERT INTO Test VALUES ('anyname');)
 - e. Run
 - f. Log any errors for troubleshooting
 - g. Next TYPE (SELECT * FROM test;)
 - h. If you have results than you are successfully set up, if not log an errors or issues for troubleshooting your script should look something like this

```
CREATE TABLE(  
test First_Name CHARACTER(25));
```

```
INSERT INTO Test  
VALUES ('Codd');
```

```
SELECT * FROM Test;
```

AWS REDSHIFT

Because this is a free trail that can cost this is optional.

Here is a link to AMAZON resources for installation, Recommendation is to complete the course work first and then Set up the free trail for AWS in order to rework the coursework through AWS redshift to get experience in their environment. Remember their syntax is just PostGres.

TEXT EDITORS(60min)

Why the heck would you use a text editor when you can code directly into a Query editor?

Faster to Edit and access- You can open up a text editor just like you would a word doc.

More color schemes to read your text Brackets parenthesis color coded. Tired of counting parenthesis this helps a ton.

Easier to search through code, find replace – Again much like word you might want to edit using a find replace

Bookmarking – book mark areas of your code to come back to.

It is a good habit to create your code in a text editor then test it when you are ready.

SUBLIME Text 3

<https://www.sublimetext.com/3>

Download and install is fairly straight forward.

In sublime open a new file and paste the below doc. Follow along to learn some tricks with this tool.

Sublime Text editor can make your edits much quicker as well as troubleshooting.
Check it out!

Look at the example below.

```
I live in Seattle.  
I enjoy many resteraunts and night life in Seattle.
```

Let's say we want to add ',Washington' to the above sentence you can do this by:

- 1) Place your cursor after Seattle
- 2) Hold the control key down (mac use command)
- 3) Place your cursor after the second Seattle
- 4) Type ',Washington'

Let's say you move to New York and you want to update your city and state.

- 1) Highlight the first instance of Seattle, Washington
- 2) Press Ctrl+d or Cmd+d
- 3) Press Ctrl+d or Cmd+d again and notice it highlights the Seattle, Washington in step 1

4) Type New York, New York

You don't have to highlight if it is just one word.

wrong code, wrong code, wrong code

- 1) Place cursor in the first instance of wrong
- 2) Press Ctrl+d or Cmd+d 3 times
- 3) Type 'correct'

Using the ALT button you can select many lines to insert code

Obi-Wan

Anakin Skywalker

Han Solo

K-2SO

Luke Skywalker

Princess Leia

BB-8

- 1) Place your cursor before Obi-Wan
- 2) Shift+right click (Mac Alt+left click) and drag to space before BB-8
- 3) Type "I have a bad feeling about this."

Let's do the same thing but add the quote after the characters names. because they are varied length you will want to

Obi-Wan I have a bad feeling about this.

Anakin Skywalker I have a bad feeling about this.

Han Solo I have a bad feeling about this.

K-2SO I have a bad feeling about this.

Luke Skywalker I have a bad feeling about this.

Princess Leia I have a bad feeling about this.

BB-8 I have a bad feeling about this.

- 1) Highlight all characters
- 2) Ctrl+Shift+L mac users Cmd+Shift+L
- 3) Right arrow
- 4) Type "I have a bad feeling about this."
- 5) Extra trick* PC click on Home key Mac cmd+ left arrow
- 6) type " Which movie(s)?"

MANAGING LINES

Need to rearrange your fields in an Statement try this trick.

SELECT

Middle_Initial

DOB

Last_Name

First_Name

FROM table;

- 1) Place cursor in First_Name
- 2) Ctrl+shift+Up arrow
- 3) Move fields so the order top to bottom is

First_Name
Middle_Initial
Last_Name
DOB

- 4) Delete DOB by clicking cursor into DOB then holding down Ctrl+Shift+K

Now lets work with indendation. Brackets[] are used with the ctrl or cmd key to indent towards the right or the left

```
SELECT
First_Name
  Middle Initial
Last_Name
                                DOB
Start_date
FROM table;
```

- 1) Click cursor anywhere into the line that has First_name
- 2) use Ctrl+ [or] to move First name to be indented under SELECT

```
SELECT
  First_name
```

- 3) Complete the rest of the statement to look like this.

```
SELECT
  First_name,
  Middle_Initial,
  Last_Name,
  DOB,
  Start_date
FROM table;
```

*Notice commas have been added what is a fast way to do this?

*Menu shortcut for indentation

- 1) Highlight lines to indent
- 2) From menu bar choose Edit>Line>Reindent

*CTRL+SHIFT+V is an intelligent paste that will paste indents

Want to see all shortcuts?

Ctrl+Shift+P or CMD+Shift+P

Custom Settings

HIGHLIGHT ENTIRE LINE

- 1) From Menu Preferences>Settings
- 2) Add "highlight_line":true,
should look like

```

    {
      "highlight_line":true,
      "color_scheme": "Packages/Color Scheme - Default/Monokai.sublime-color-scheme",
      "font_size": 12,
      "theme": "Default.sublime-theme"
    }

```

BIGGER CURSOR

1) in the same window as the above example add

```

"caret_extra_width":3
"caret_extra_top": 2
"caret_extra_bottom":2
  change numbers to your liking of width
  should look something like this

```

```

    {
      "caret_extra_width":3,
      "caret_extra_top":2,
      "caret_extra_bottom":2,
      "highlight_line":true,
      "color_scheme": "Packages/Color Scheme - Default/Monokai.sublime-color-scheme",
      "font_size": 12,
      "theme": "Default.sublime-theme"
    }

```

LINE PADDING

1) add these lines to the above code to add extra padding for readability.

```

"line_padding_bottom":1
"line_padding_top":1
    {
      "caret_extra_width":3,
      "caret_extra_top":2,
      "caret_extra_bottom":2,
      "line_padding_bottom":1,
      "line_padding_top":1,
      "highlight_line":true,
      "color_scheme": "Packages/Color Scheme - Default/Monokai.sublime-color-scheme",
      "font_size": 12,
      "theme": "Default.sublime-theme"
    }

```

As you can imagine there is a lot more but this is a good starting point.

Final note to get the color coding to help with syntax when you save your file save it and type the extension of the code you are using "test.sql"

ANACONDA (Optional)

Anaconda website has a tendency to change links as of this document the best way to download is to go to

<https://www.anaconda.com/distribution/> Scroll down to Python 3.7 and Download. The download is pretty straight forward and should not require intensive configuration.

Any Python Material will be covered before or after classes for students that are interested.

GITHUB

Github is a way to share, have version control or just create a repository of your work. For this class we will be using it very lightly. You will want to set up a profile. <https://github.com/>

EXTRAS

Do not Download Tableau or Alteryx until later in the class. Because they are trial versions or student versions the time with those applications are limited.

This is a lot to set up but again, once your done you can take a break and we will be set up for success in class. Looking forward to seeing you there.

Feel free to reach me at Matthewmorris.da@gmail.com if you have any questions or get stuck. I will be available before class around 5PM most days.

Matthew Morris