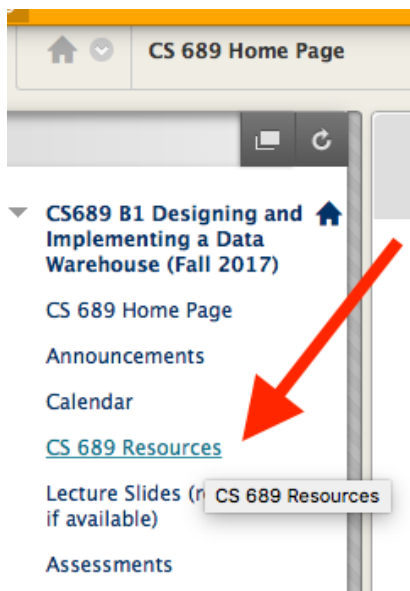


BU MET CS 689 B1 - 2017-09 Fall
Designing and Implementing a Data Warehouse


Assignment 1a: Software and Appliance Installations





To get the software and download go to the CS 689 Resources page via the menu at left.


You will see a set of links for downloading various materials:


CS 689 Resources

 **[VirtualBox download](#)**
Find the link for Windows, Mac or whatever and download.

 **[Google Drive for CS 689 2017 Fall](#)**

 **[DataGrip Download](#)**
You can download from this page and get a 30-day trial of DataGrip for the class.

 **[JetBrains Student License application](#)**
Once you get the student license, you will get a license key allowing you to use Data

 **[Tableau Desktop Download](#)**
Students, here is the information for Tableau:
Hi Andrew Wolfe,

Thank you for your interest in the Tableau for Teaching program. Below is a website (landing page

VirtualBox

Download the appropriate version of VirtualBox for your computer. When it's done downloading, run the installer.

 **VirtualBox** [Login](#) [Help/Contact](#)

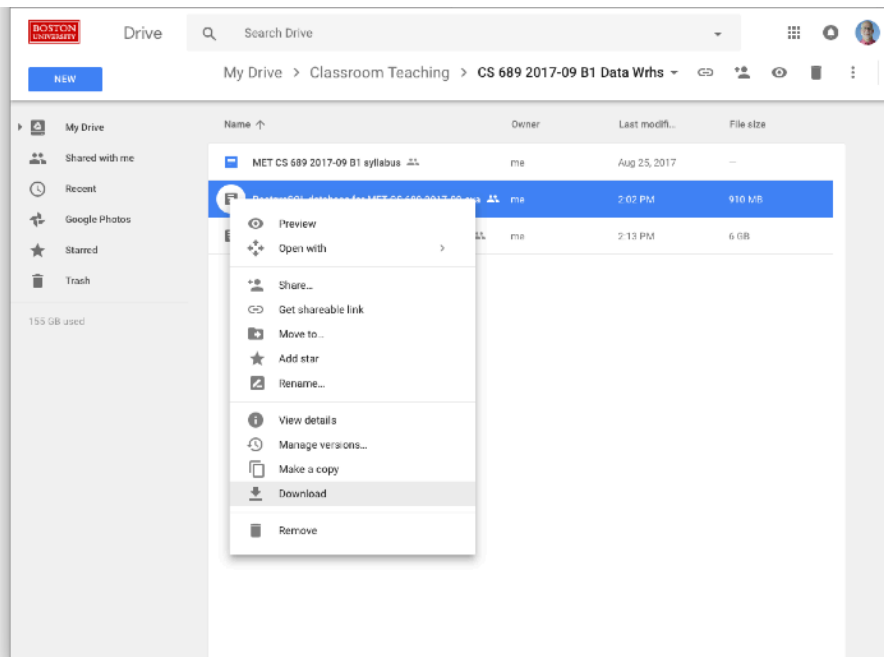
Download VirtualBox

Here, you will find links to VirtualBox binaries and its source code.

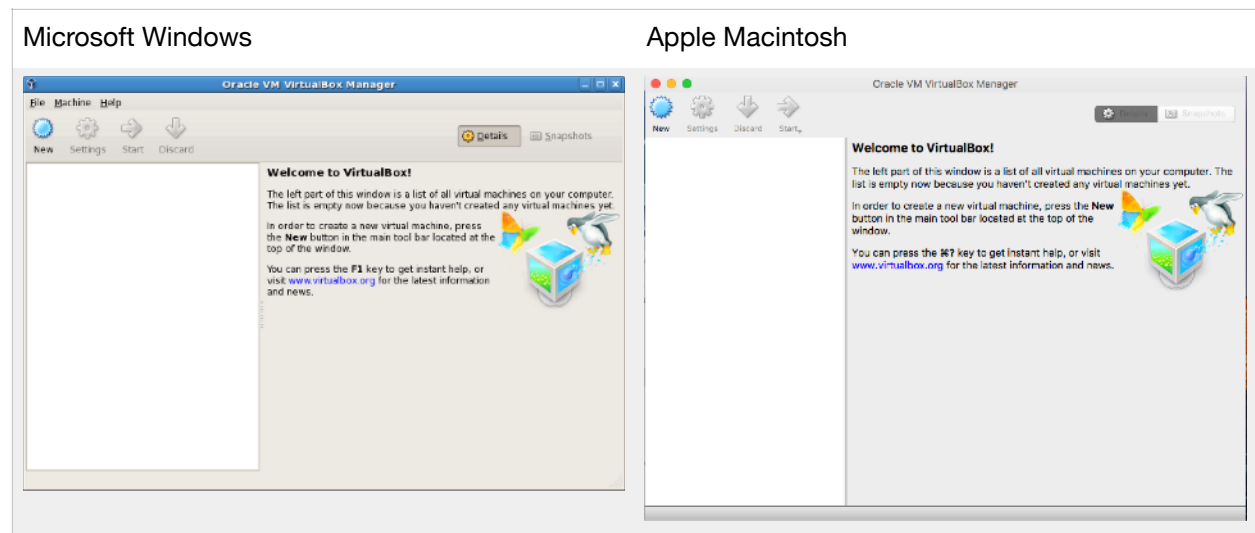
VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

- **VirtualBox 5.1.26 platform packages.** The binaries are released under the terms of the GPL version 2.
 - [Windows hosts](#)
 - [OS X hosts](#)
 - [Linux distributions](#)
 - [Solaris hosts](#)
- **VirtualBox 5.1.26 Oracle VM VirtualBox Extension Pack** [All supported platforms](#)
Support for USB 2.0 and USB 3.0 devices, VirtualBox RDP, disk encryption, NVMe and PXE boot for Intel cards. See [this chapter from the User Manual](#) for an introduction to this Extension Pack.
The Extension Pack binaries are released under the [VirtualBox Personal Use and Evaluation License \(PUEL\)](#).
Please install the extension pack with the same version as your installed version of VirtualBox.
If you are using **VirtualBox 5.0.40**, please download the extension pack [here](#).
- **VirtualBox 5.1.26 Software Developer Kit (SDK)** [All platforms](#)



After your installation is complete, launch VirtualBox and you will see the Manager window



At left is the currently-empty set of virtual machines for you to use.

At this point, you need to download our Assignment 1 appliance.

Virtual Machine Appliance for Assignment 1

In your browser, go to the Google Drive that I shared with the class. It should look like this.

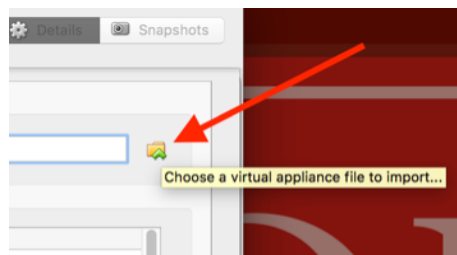
Click “Download.” Google will warn you that it’s too big to scan for viruses, just download it anyway. Make sure you know where! When finished, the downloaded appliance will have an icon like this:

Import Virtual Machine Appliance

You can just as likely double-click the downloaded file, but the explicit way to load this into your VirtualBox manager is to select the “File” menu and choose “Import Appliance...” You can navigate to the file you downloaded by clicking the stupid-looking button at the right for “Choose a virtual appliance file to import...”

Either way, once VirtualBox has the file, it will show you the summary description of the appliance:

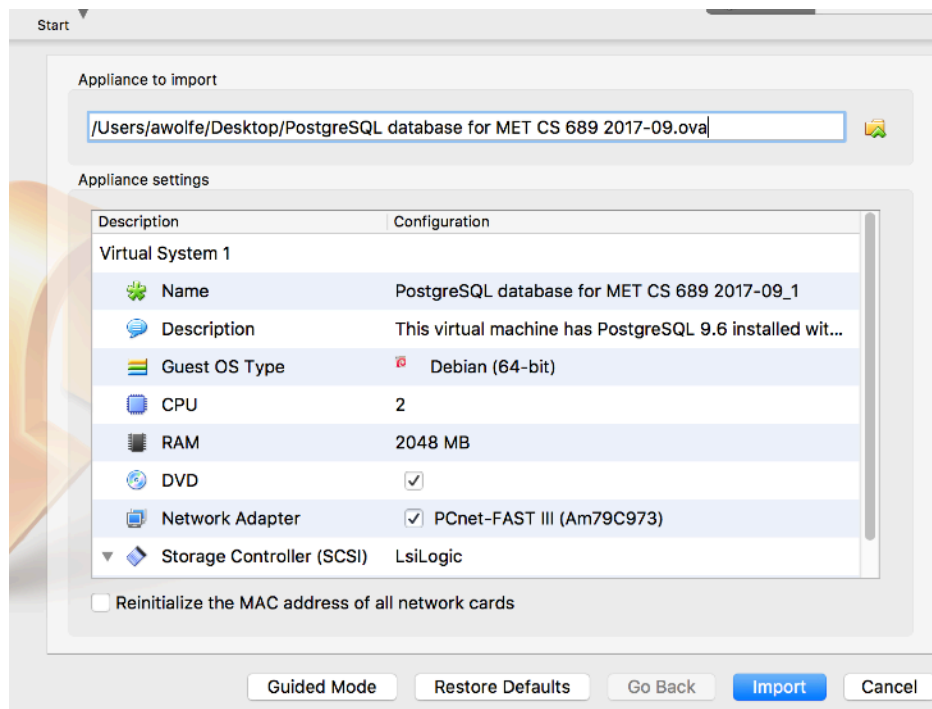
You can increase the RAM or CPUs if your computer will handle it. Don’t worry about anything



else, just click “Import.” It may take 3-5 minutes or it may go much faster.

You may have tried to rename your virtual machine when you imported it. However, this doesn’t actually take. After importing, you can change the name as you like by selecting the VM and the Settings button.

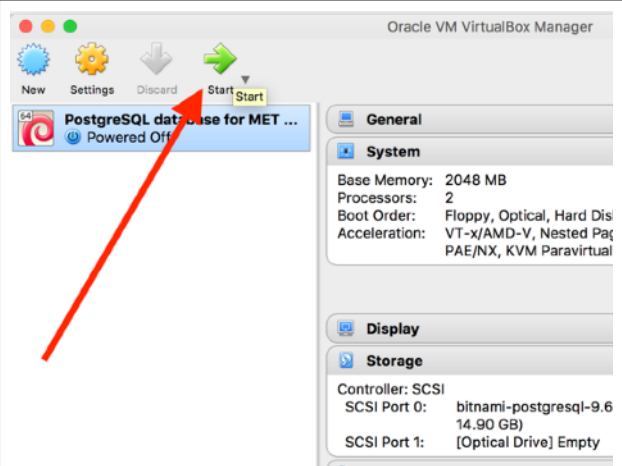
Trial Launch of Appliance



Action

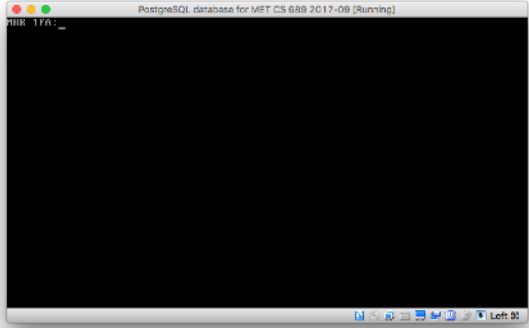
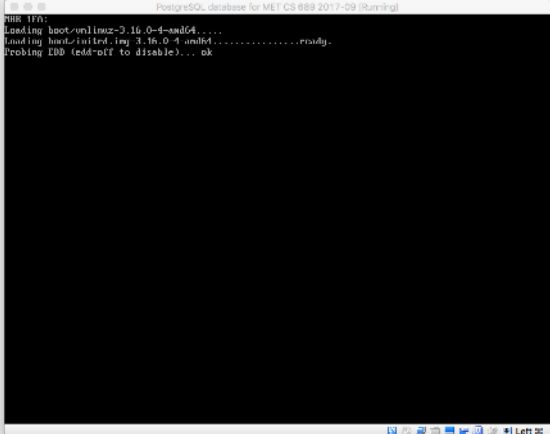
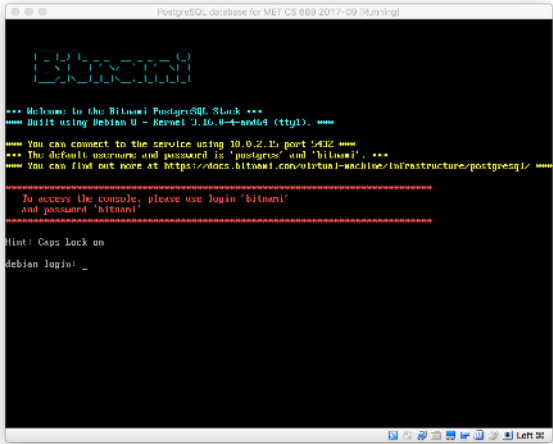
In the VirtualBox Manager, select your imported appliance and click "Start"

What it looks like



You will see the virtual machine startup screen



Action	What it looks like
You may see this text, and then the VM stops. If so, just click in the virtual machine and hit return. It will continue from there.	
And the startup continues	
And then the VM is ready to use	

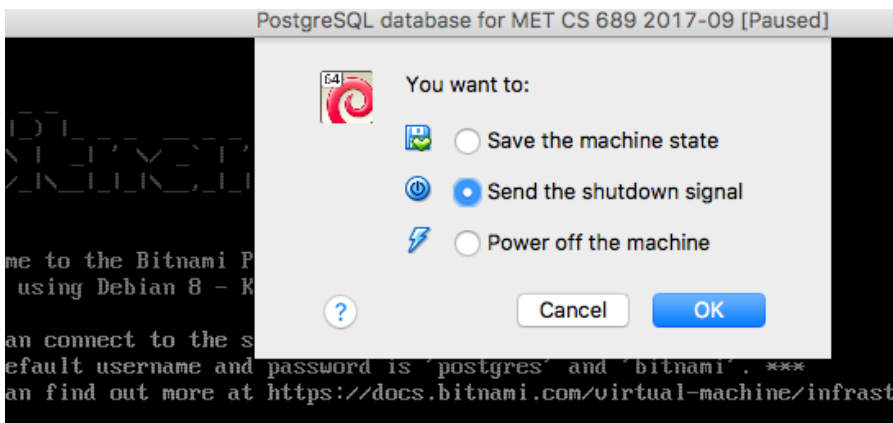
After a few minutes, the machine will go black. Click in the virtual machine and hit return, and the display will come back.

Virtual Machine Mouse and Keyboard “Capture”

Alarming, after you start this virtual machine, you can no longer see or use your mouse. It has been “captured,” along with your keyboard. To work outside your virtual machine again, you need to press a specified key on the keyboard. Luckily, which key this is is shown on the lower right corner of the virtual machine. On my Mac it has “Left ⌘” meaning the ⌘ command key to the left of the space bar; on Windows, it is supposed to be the control key to the right of the space bar, “Right ⌵”.

Press that key now and, whew, you have your computer back!

Now, shut down the virtual machine. Hit the close box in the window, and it will ask you what to do.



Choose “Send the shutdown signal” and hit OK. The window should quickly go black, and then close. The VirtualBox Manager will change to show it is “Powered Off.” This is an “orderly shutdown.”

Quick Exercise

In the VirtualBox Manager, select your VM and click Settings. Change the name of the VM to your name. Click OK and make sure the name is changed.

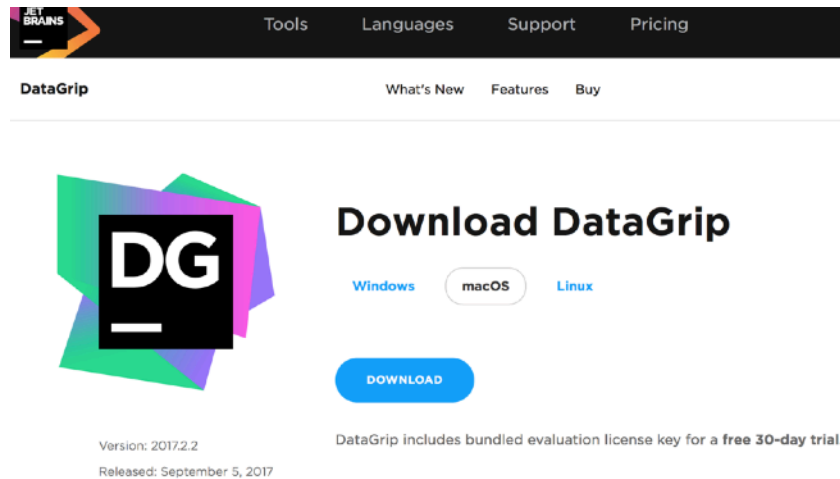
Import the appliance again from the downloaded ova file. You should see two of them.

Import the appliance a third time. These are all the same, but when they run, the changes you make in any of them do not affect the others.

OK, enough of junking things up. Delete the virtual machines you don’t want by selecting each, then Selecting “Remove...” from the “Machine” menu. I suggest you “Delete All Files” to avoid filling your disk.

Download DataGrip

Go to the [DataGrip download page](https://www.jetbrains.com/datagrip/download/) <https://www.jetbrains.com/datagrip/download/> and it should select the correct operating system. Click “Download.”

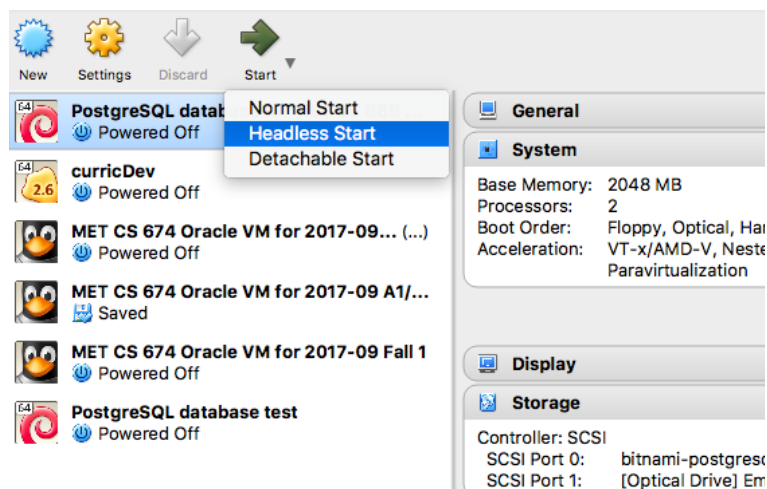


For Windows, you want to find the downloaded file and run it, it is an installer.

For Macintosh, the downloaded file is a disk image. Double-click it, and it will mount it. Drag the DataGrip application to your Applications folder.

Connect DataGrip to your Virtual Machine

Start your virtual machine “Headless.” You don’t need to use the virtual machine’s user interface window, and this way of launching it doesn’t present the window to you. Click the little triangle beside the “Start” button and it will show you this option.



You will see the little image of the machine flipping around a bit in the monitor panel to the right. When the multi-colored display shows up, you're ready.

Launch DataGrip

Important Note! DataGrip has different “Color Schemes” and I have set “Solarized Light.” Because of this some colors and/or fonts may look different!

Find the installed application and launch it. You won't see much, because you have no data sources.

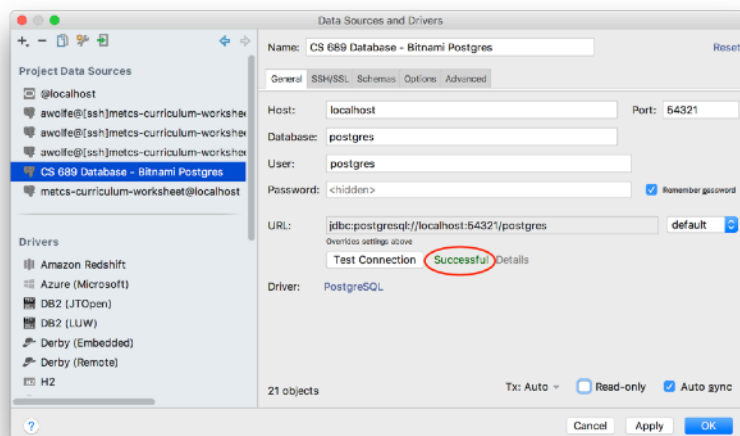
JetBrains has a good presentation here: <https://www.jetbrains.com/help/datagrip/connecting-to-a-database.html>

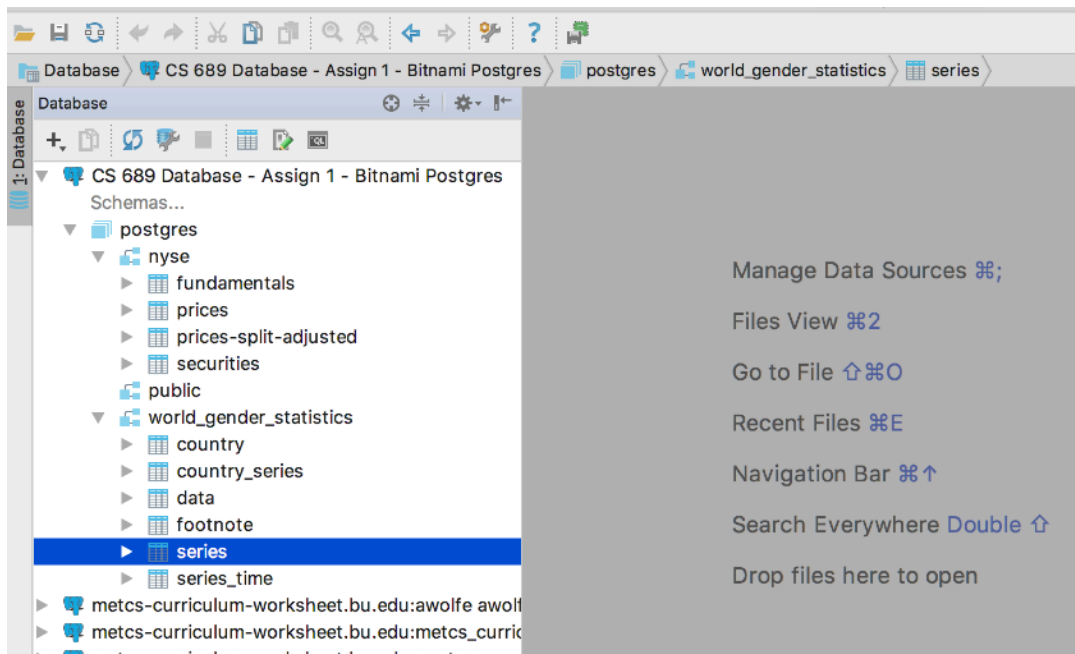
You will probably need to download the PostgreSQL driver, just click the “Download” link per the instructions.

I named my machine “CS 689 Database - Assign 1 - Bitnami Postgres.” Our connection settings are:

Host	localhost
Port	54321
Database	postgres
User	postgres
Password	bitnami

Click the “Test Connection” button, and it should report successful.

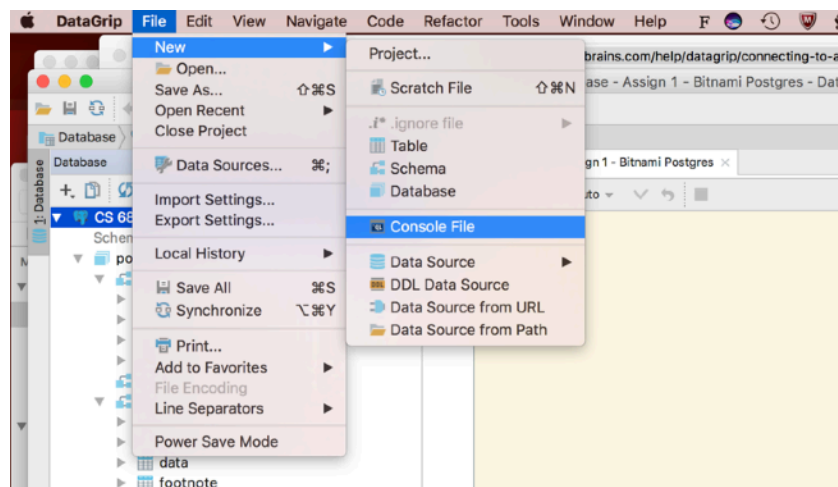




And you are on your way!

Do Some Quick Trials on the Database

DataGrip should show you a panel at the left showing you your database. (Mine has additional...)

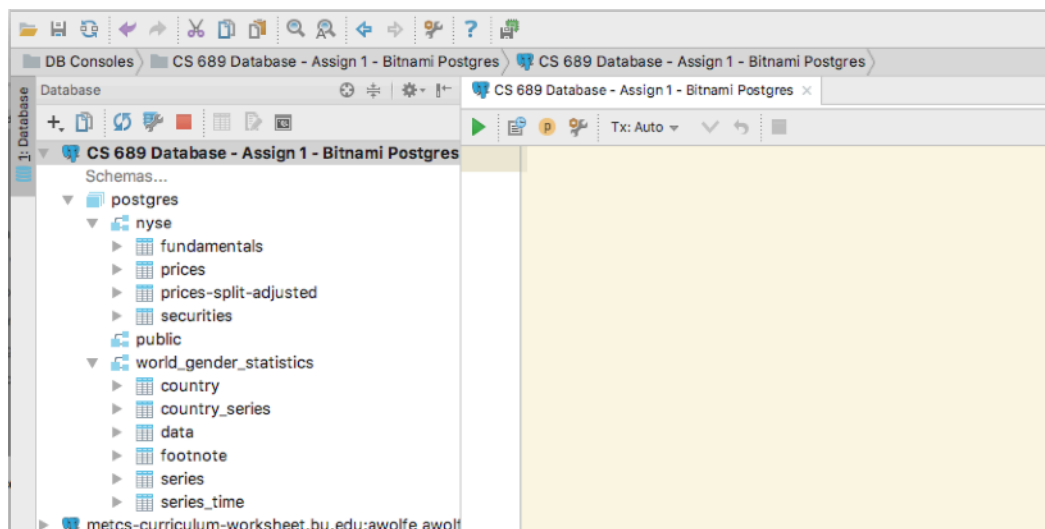


Flip the triangle at left and it will show you “Schemas...” and “postgres.” Flip open “postgres,” then the other schemas like “nyse” and “world_gender_statistics.”

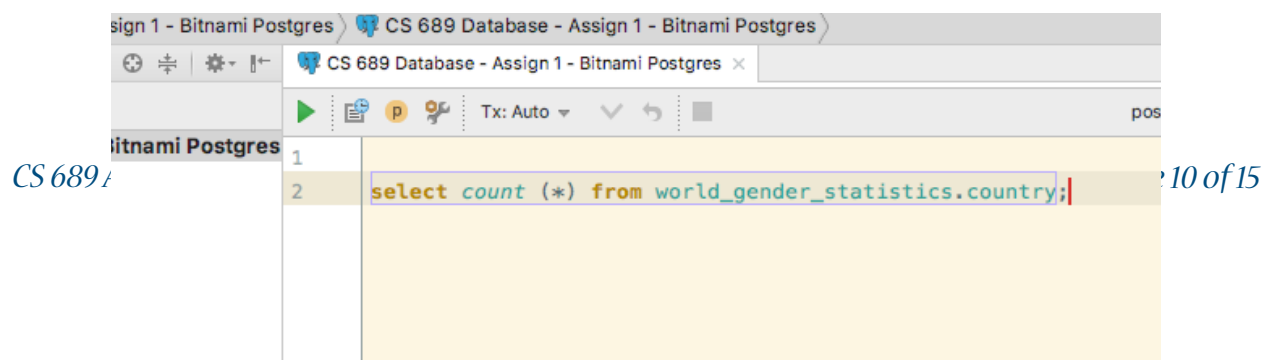
If you double-click on a table, it will show you the contents. You could do some changes, but that could kill the exercise!

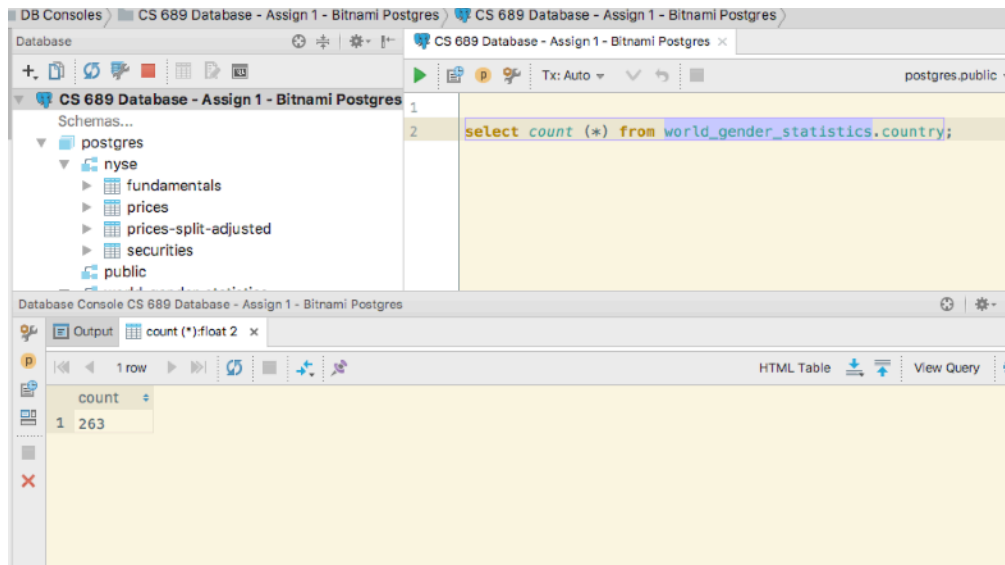
Now, open a console. There are ninety bazillion ways to do this, but for now just open the File menu, select the “New” submenu and select “Console File.”

You will get a place where you can enter SQL commands and run them.



How about this? As you type, you’ll notice DataGrip is popping up possible syntax.



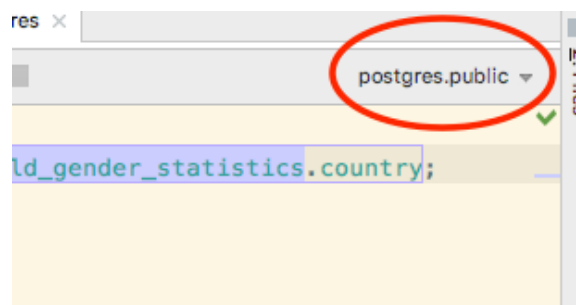


Click the green triangle to run (again, a million ways to do this) and you get your results:

One last thing: setting DataGrip Schema

Databases organize tables, views, and other objects in *schemas*. For our assignment, these include **nyse**, **world_gender_statistics**, **public** and others.

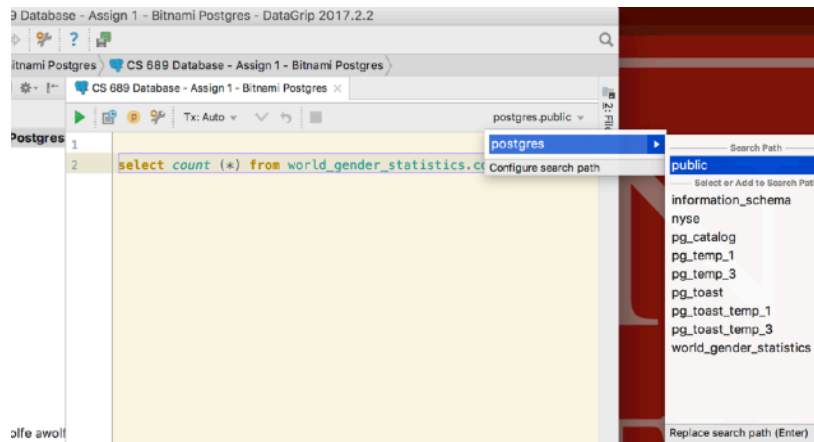
DataGrip expects you to work in **public**, which means that when you use a table, you have to put the schema name first, as in **world_gender_statistics.country** preceding. I personally find



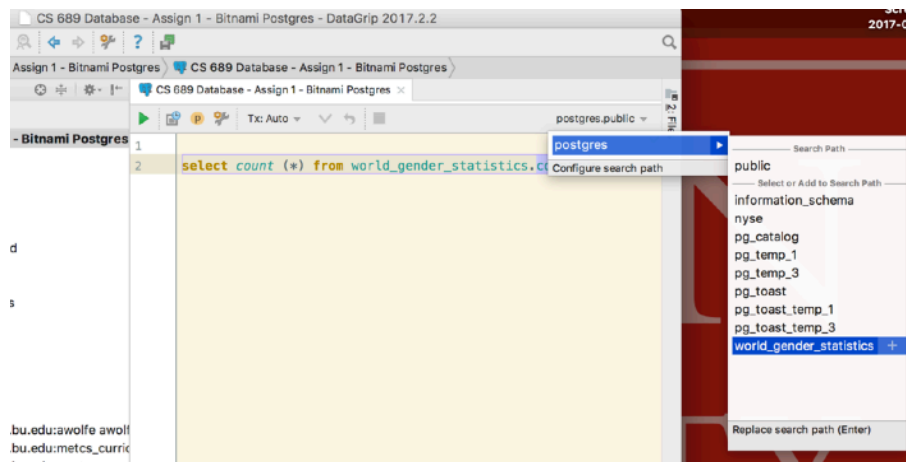
this inconvenient.

You can tell what schema you're in at the upper right:

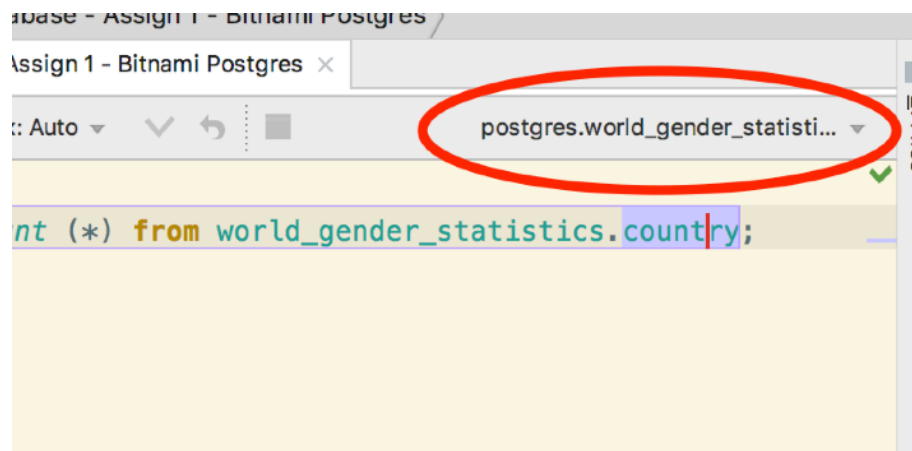
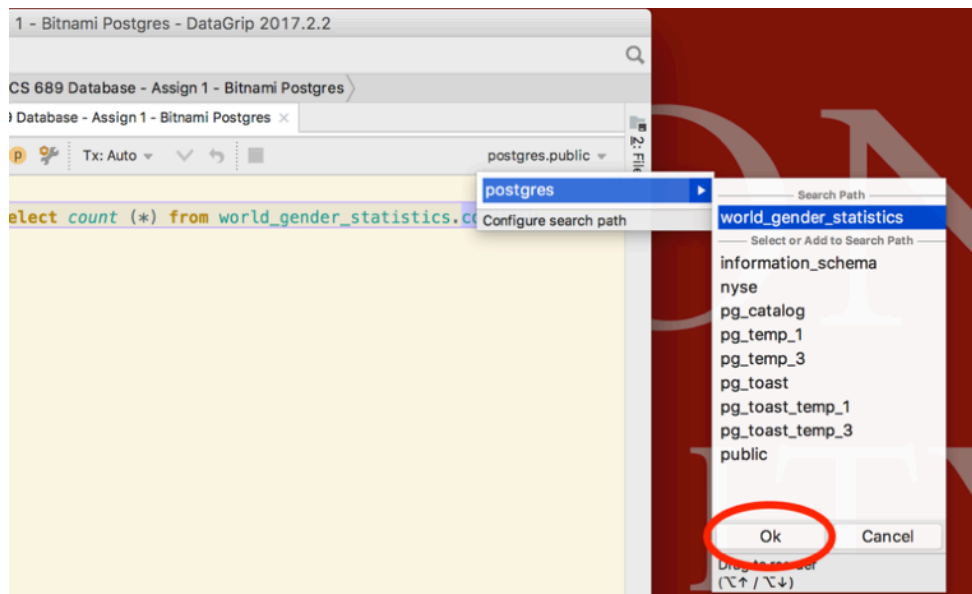
This identifies what database you're in, and then the name of the schema, and there's a triangle after that indicator, which you can click to change the schema:



To change to **world_gender_statistics**, we click on it.



After this, the menu shows an “OK” button to confirm the selection:



Then when we click “Ok,” we see the schema we want.

And we can query without prefixing the schema name.

