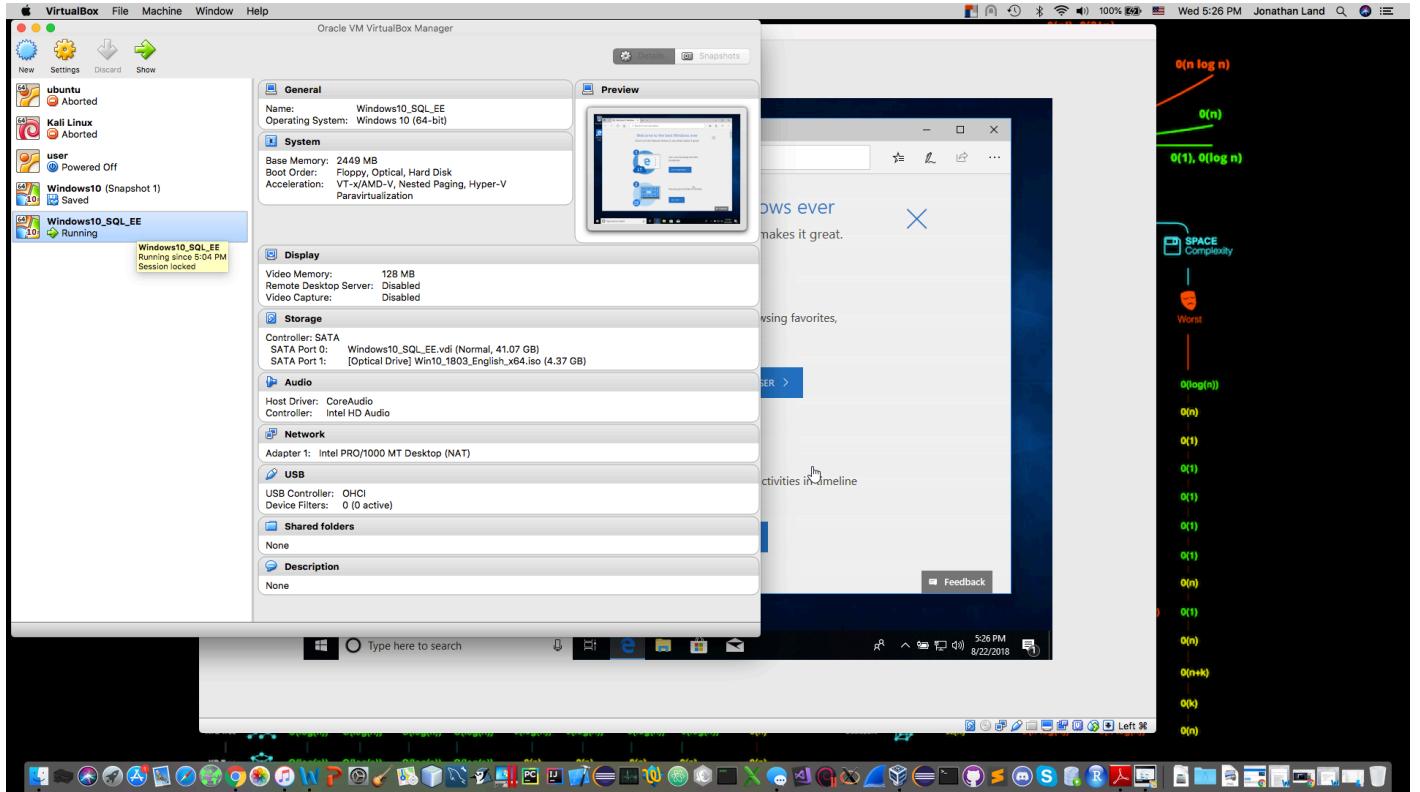


Project 1: Installing Oracle 12c (Enterprise Edition) Database and Running SQL Queries Using SQL Developer

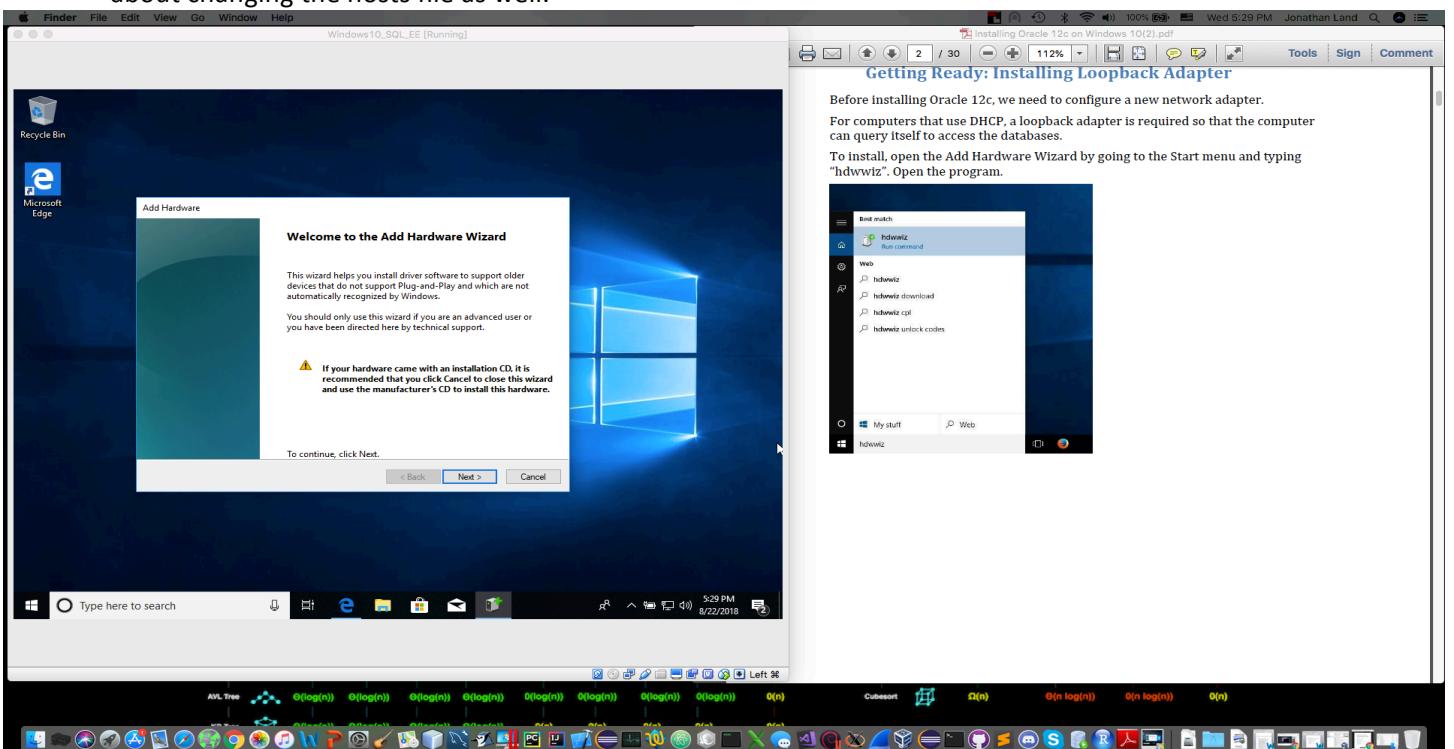
CPSC 5270 Advanced Database and Database Security

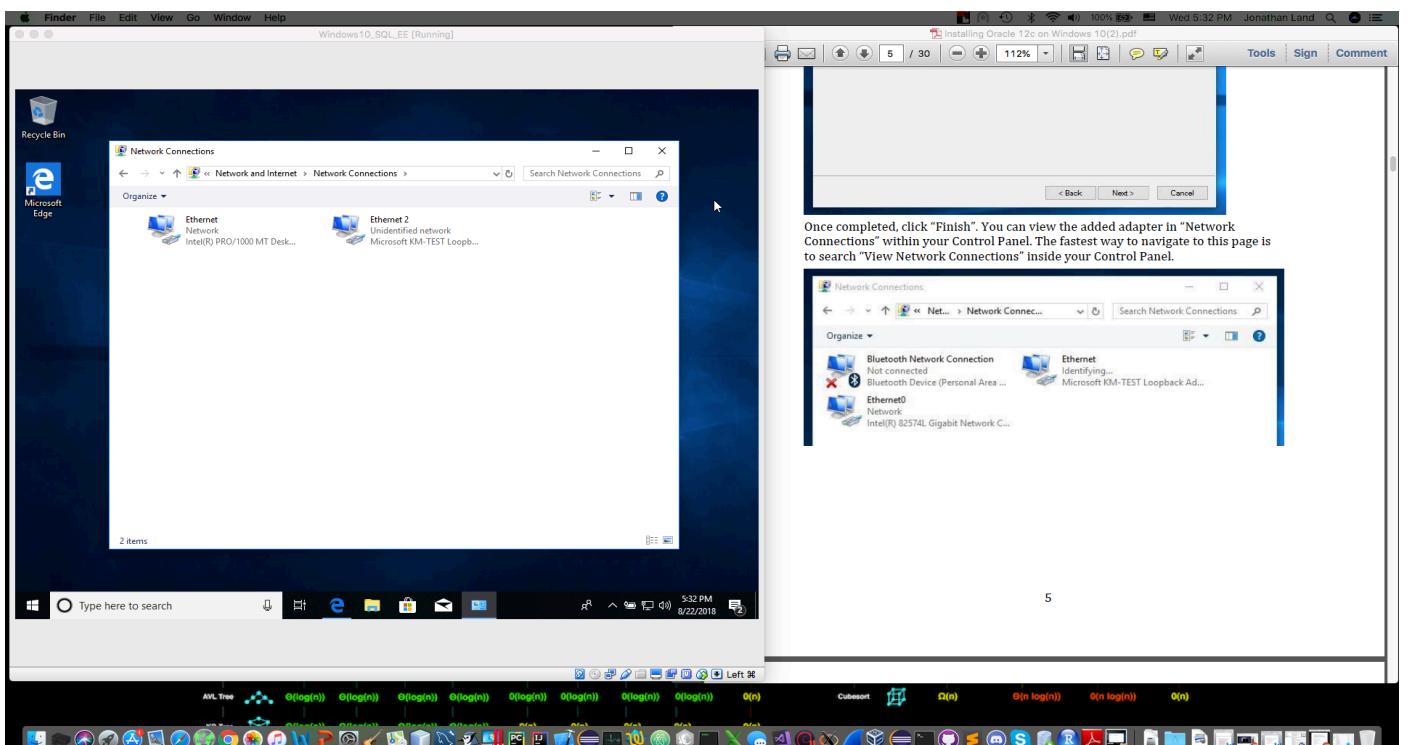
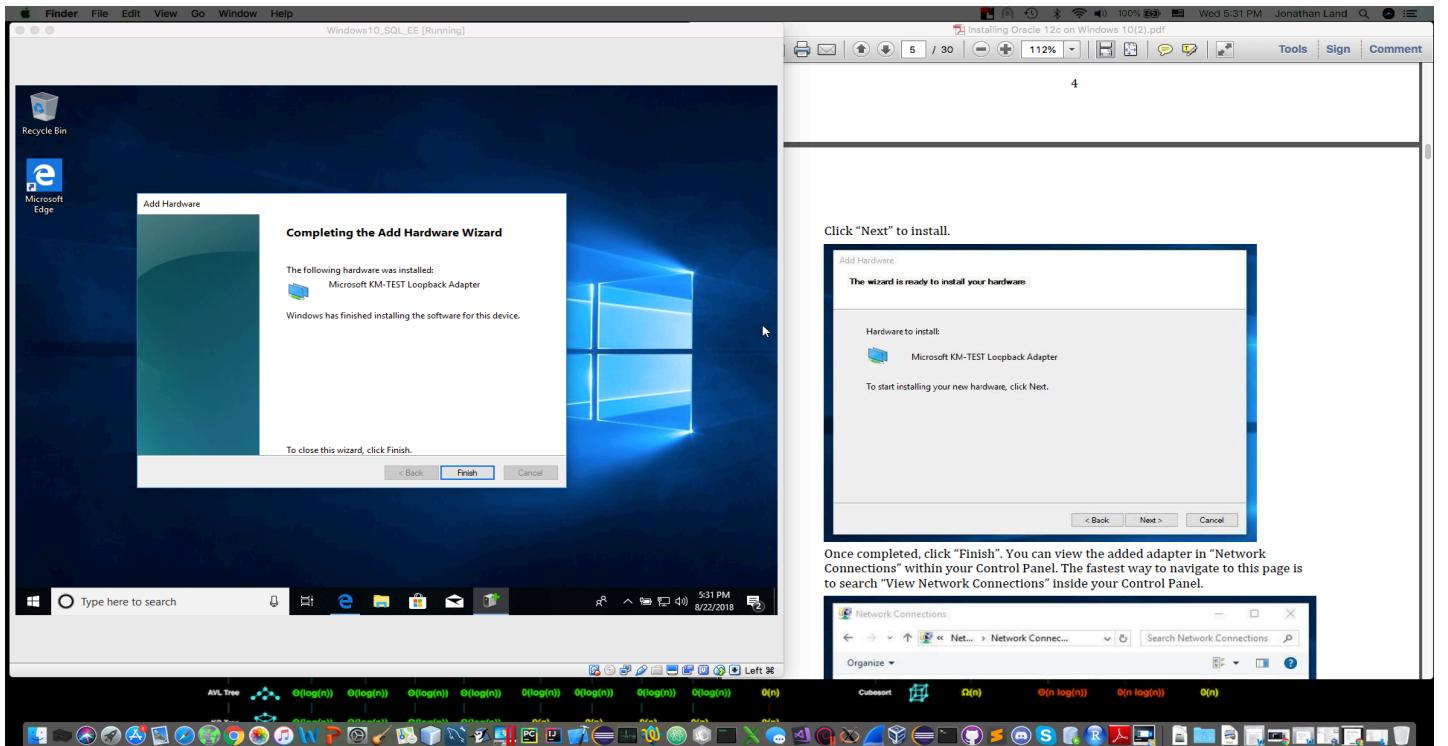
Jonathan Land

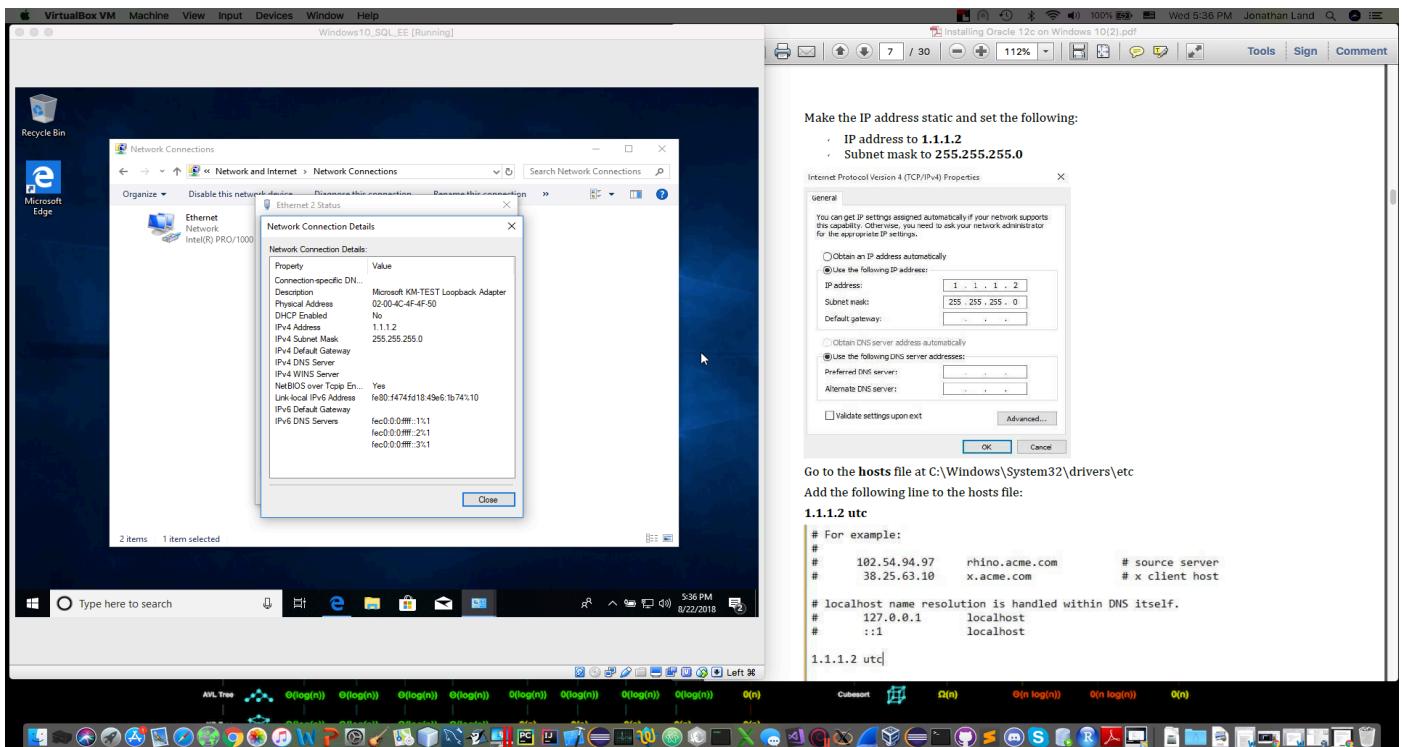
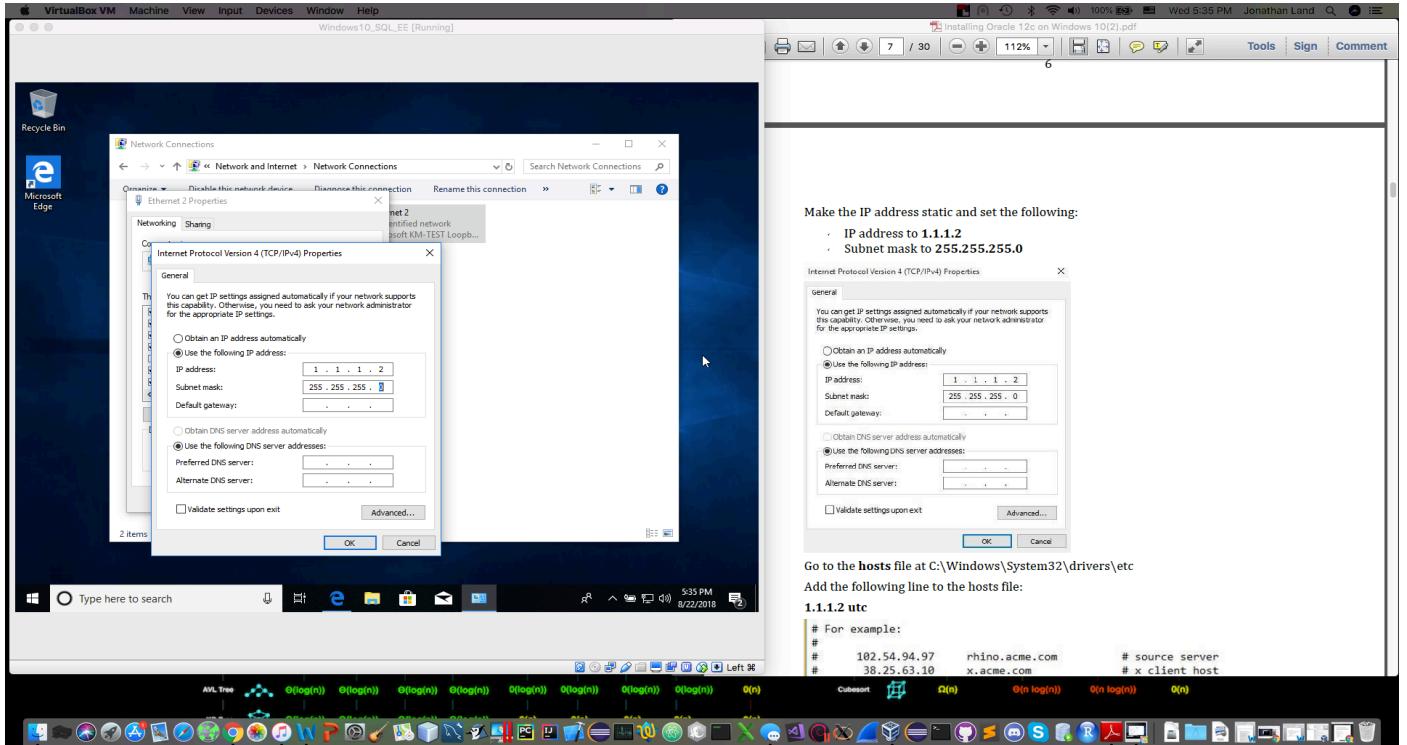
1. After installing Oracle VirtualBox on your OS, download a Windows ISO to run within the VM you will be using. For this project I have chosen to use the Windows 10 64 bit ISO, downloaded from the following URL: <https://www.microsoft.com/en-us/software-download/windows10ISO>. To get the VM up and running with the ISO, the following steps can be used. This information is readily available online as well, so this is just a summary of the main steps.
 - a. Make sure the ISO has fully downloaded.
 - b. Open Virtualbox and click “new” in top left corner. Name the VM whatever you want, such as Windows 10. Next to type, select Microsoft Windows and next to version select Windows 10(64-bit). Click continue.
 - c. Set the VM memory size to what you want (to be safe, you may want to increase so that latency/lag is not an issue [NOTE: this is taking up your actual HDD or SSD space, so that is good to keep in mind also]).
 - d. On the next screen (Hard Disk), select “Create a virtual hard disk” and click create.
 - e. Within the Hard disk file type window, select VDI (VirtualBox Disk image) and click continue.
 - f. Next, choose Dynamically allocated and click continue (unless you want to customize that more, of course). Setting up the disk space for the VM can take a while, so that is normal. After this the VM will be added to the main screen with whatever you named it.
 - g. Now, click on your VM so that this is highlighted in blue, then click on settings.
 - h. Click on storage, and then click on empty. Now at the side of Optical Drive, you will see a disk icon. Click on that, choose virtual optical disk file, and then locate your Windows 10 disk image (ISO) that you downloaded and click open. Now click OK.
 - i. Now you are ready to start and install Windows 10 on this VM. Click Start and go through the setup process for Windows until it is installed (Note: you do not have to have a product key, so just skip that part). After this, the process is straightforward.



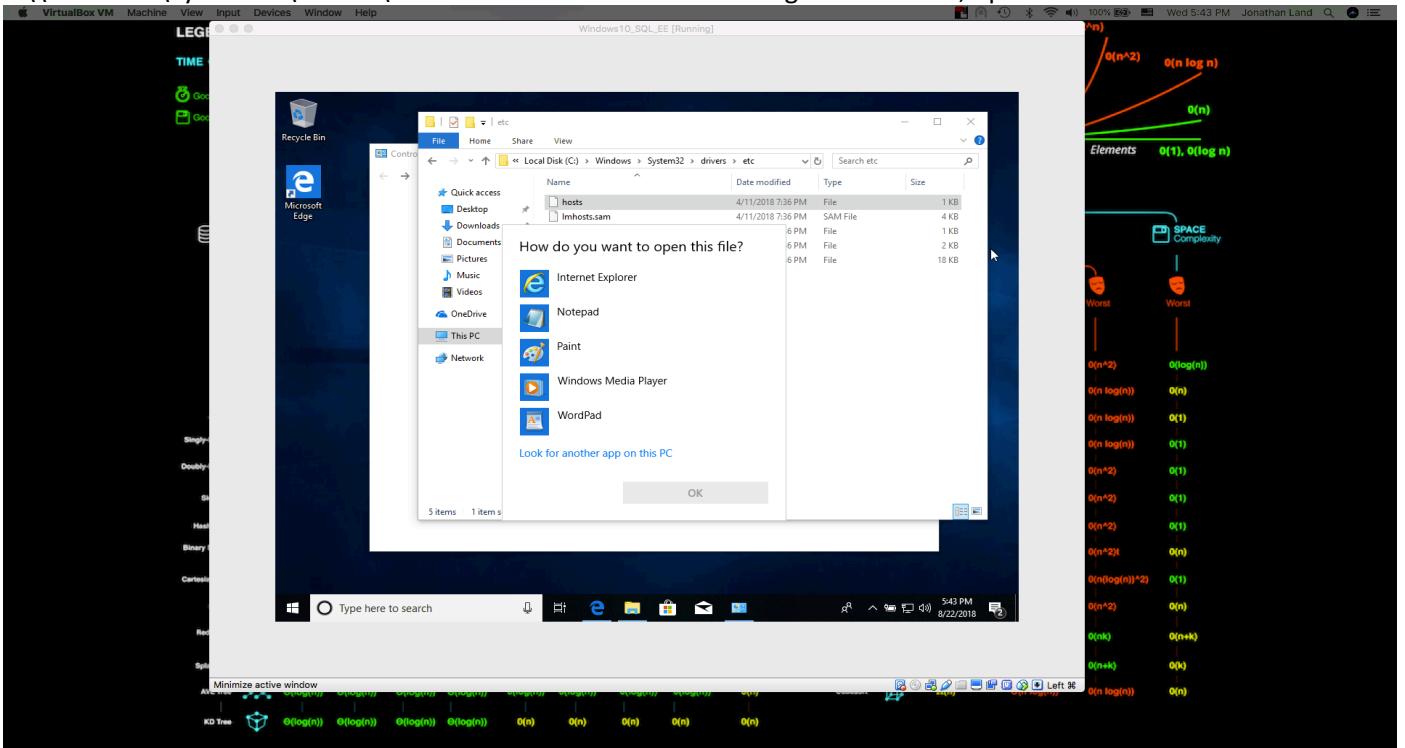
2. Next install the loopback adapter so that the SQL work will be saved after disconnecting from network, etc. You can use the following directions to do this from the course pdf: **Installing Oracle 12c on Windows 10**. Listed below are some screenshot of the process. Additionally, I have added a section about changing the hosts file as well.



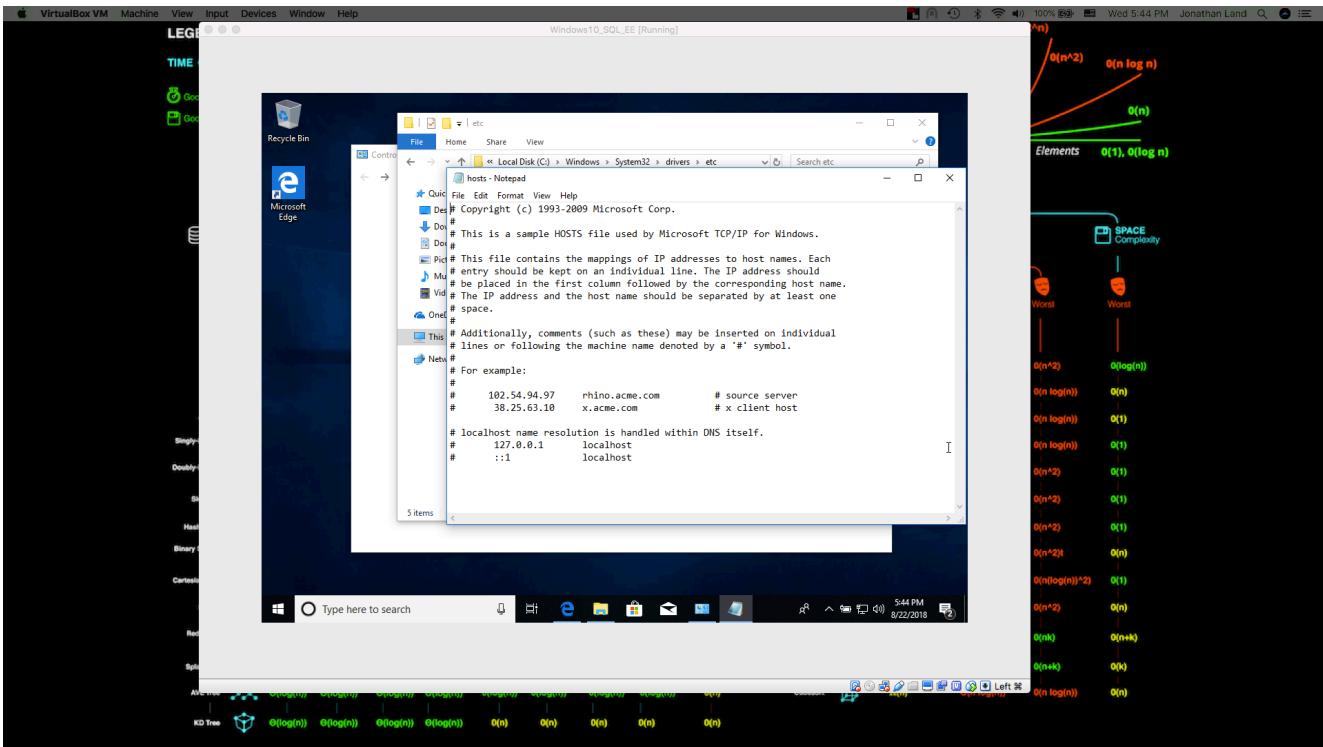


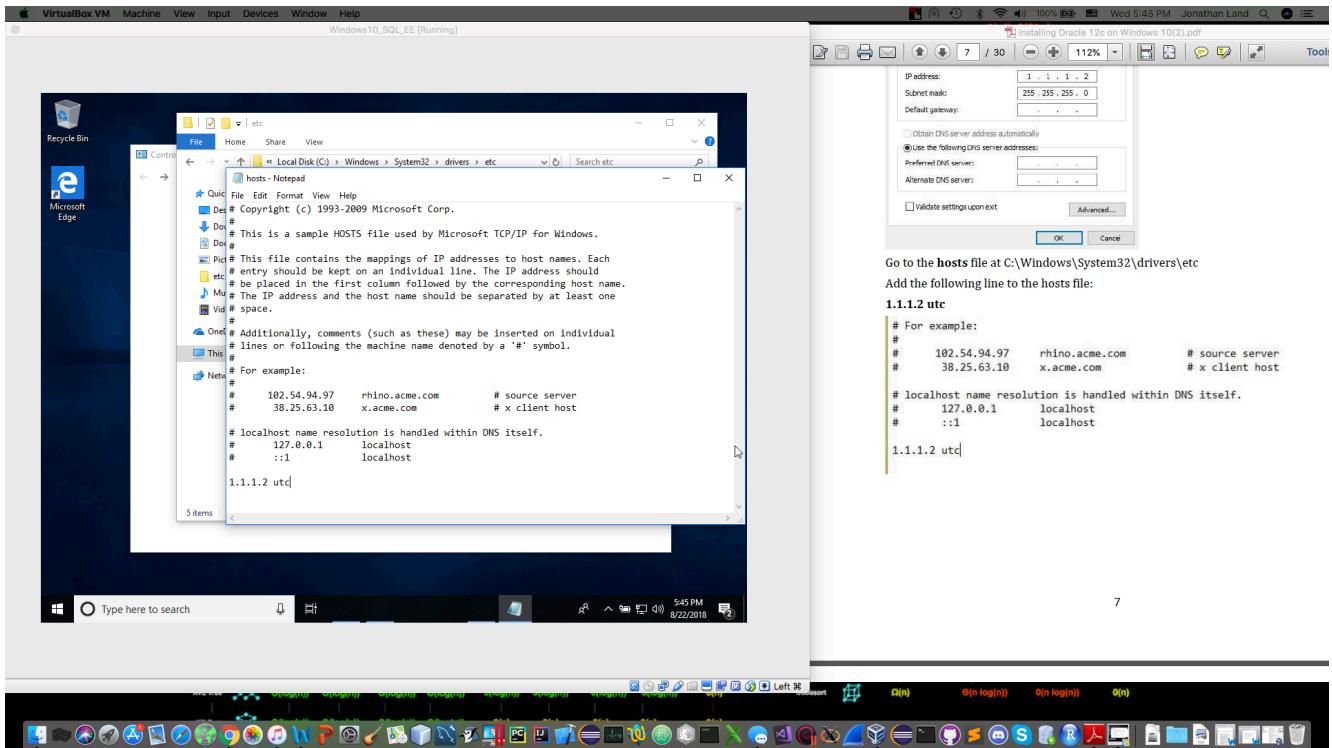


If for some reason you cannot change the hosts files, the following may be helpful to do so: After typing in `c:\Windows\System32\drivers\etc` into the search bar and finding the hosts file, open this.

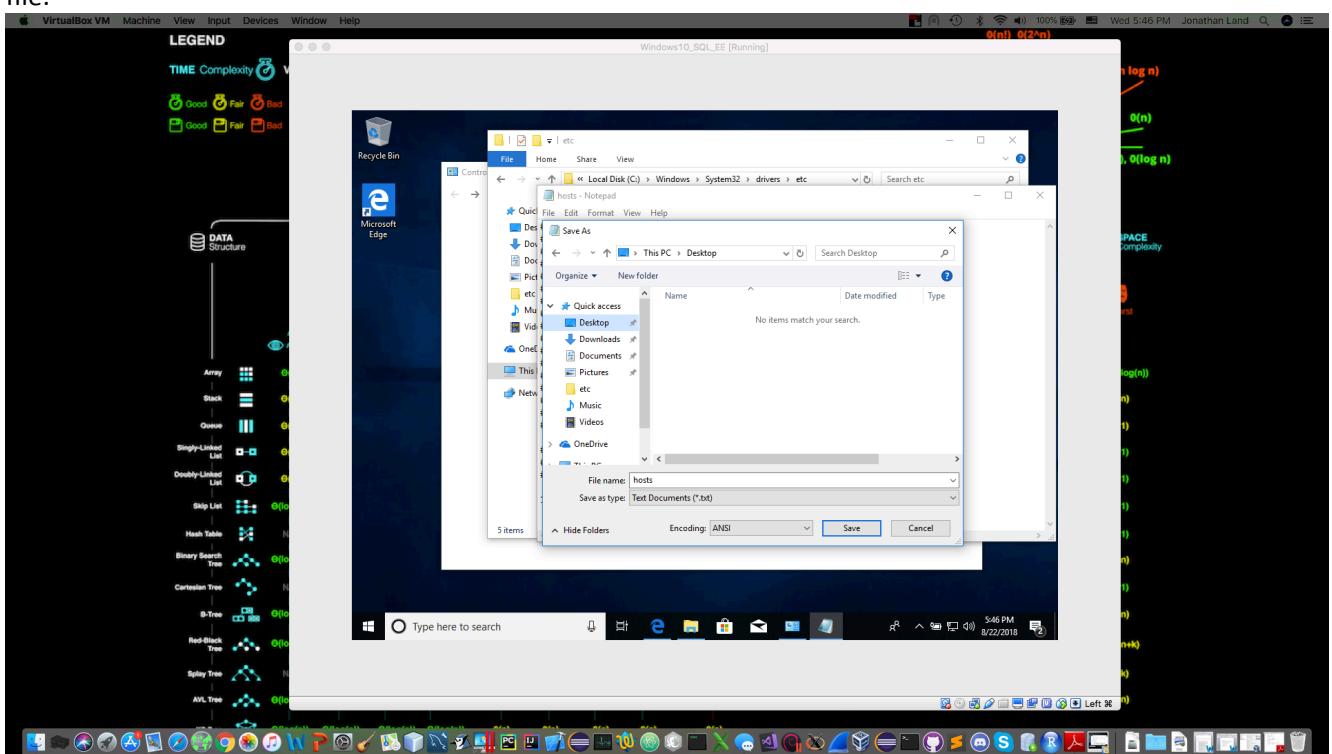


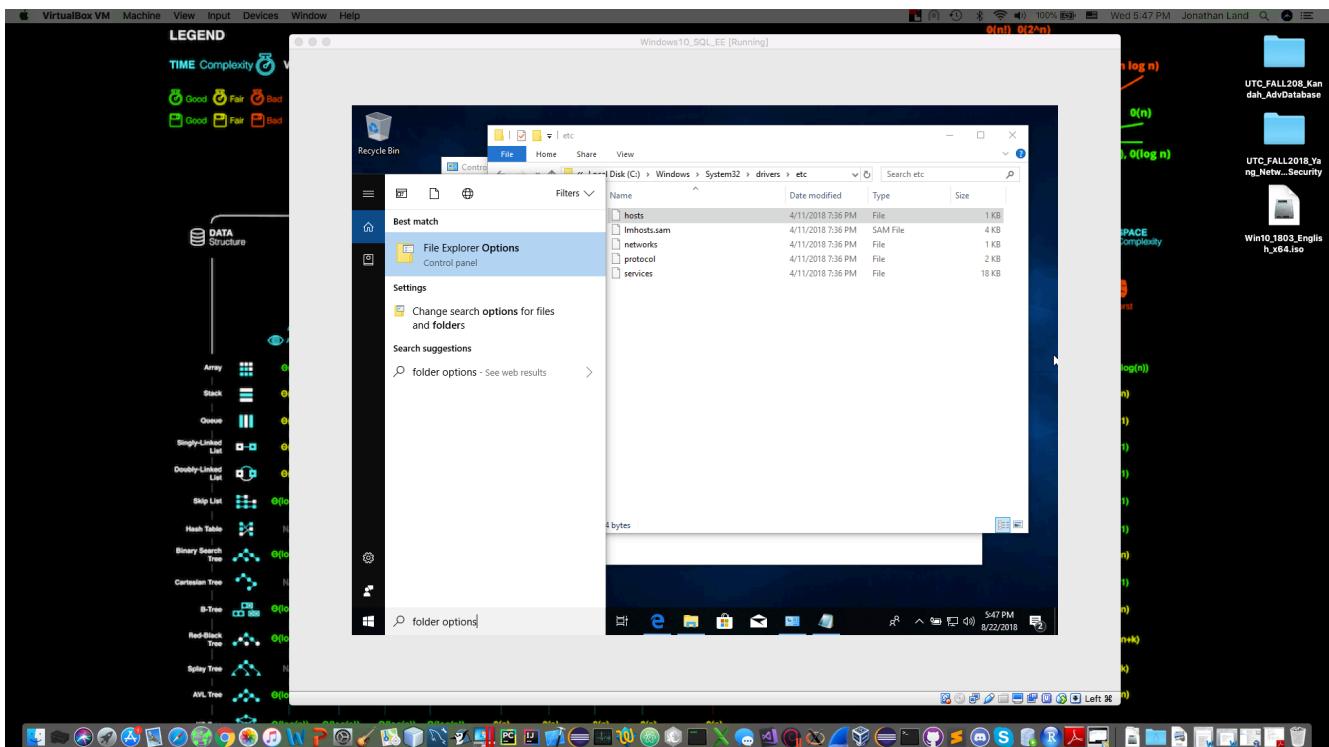
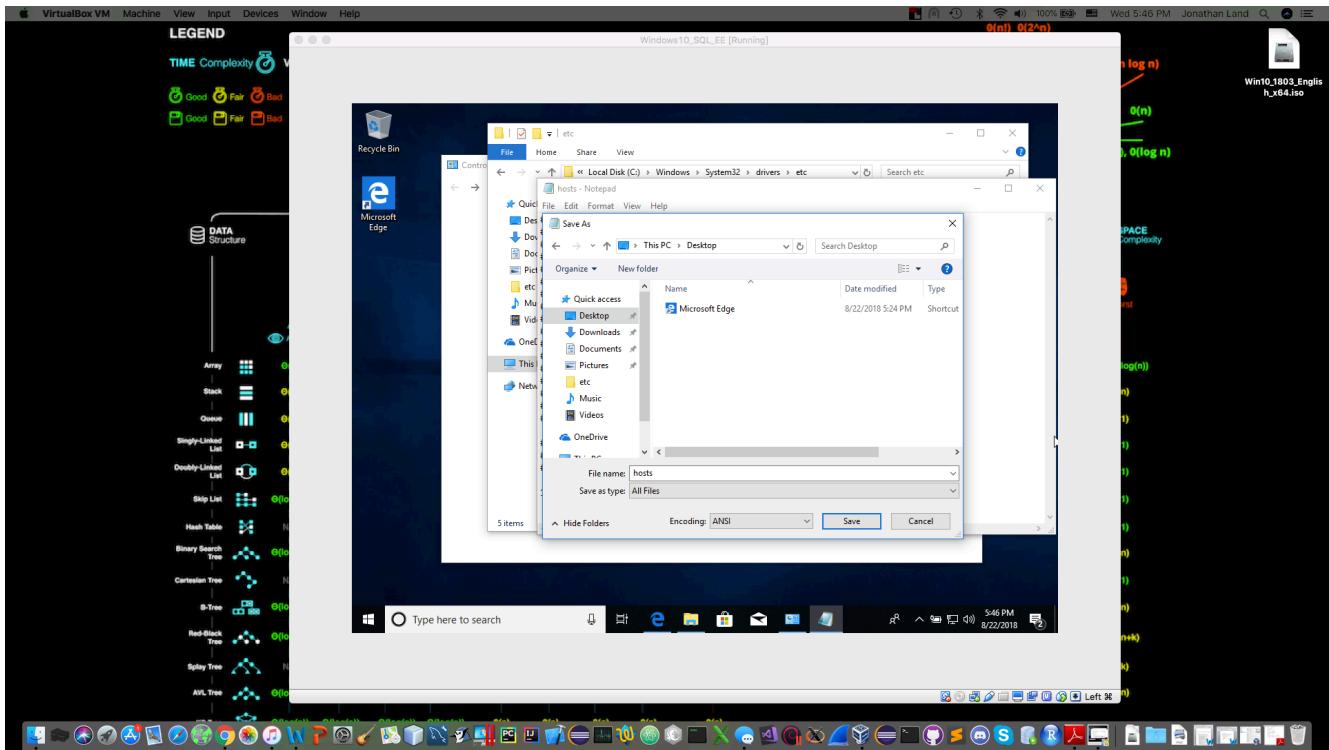
Now add **1.1.1.2 utc** at the bottom of the file.



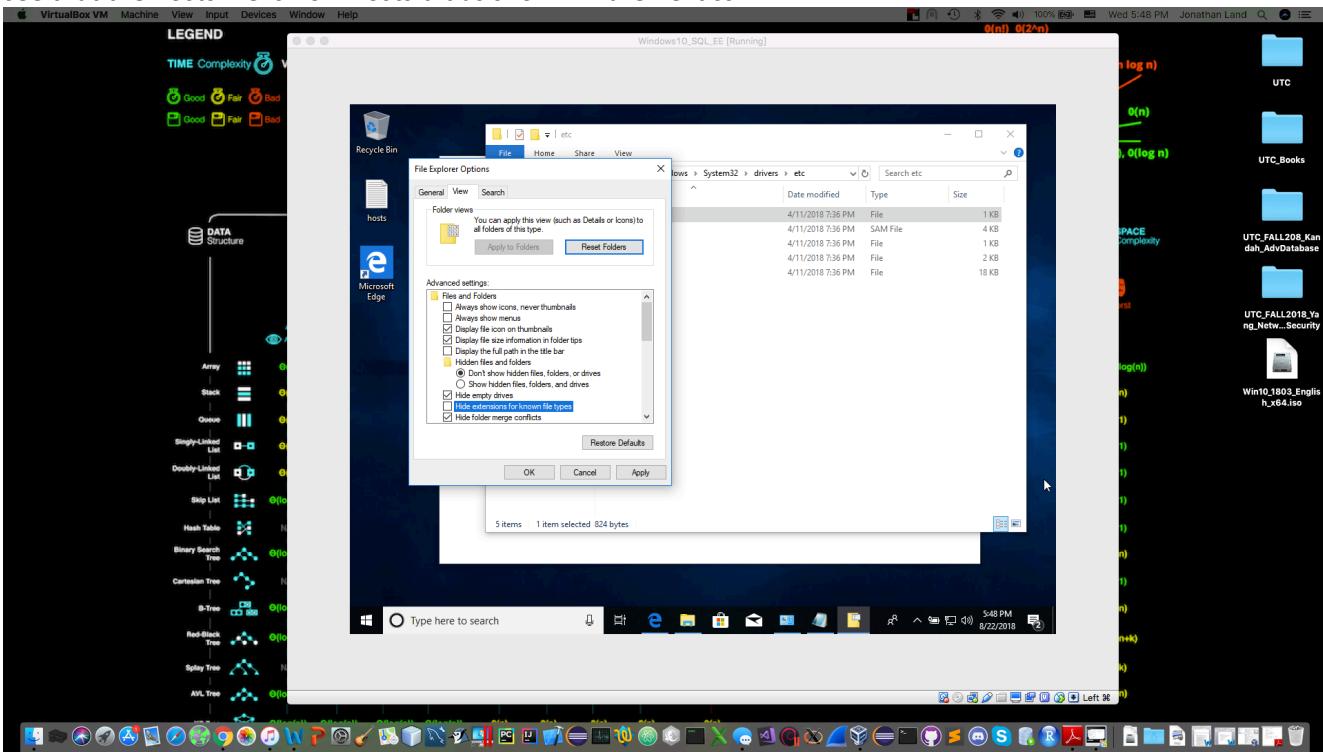


After this, it will ask you to save this, so save this to your desktop, because this is going to replace the other host file.

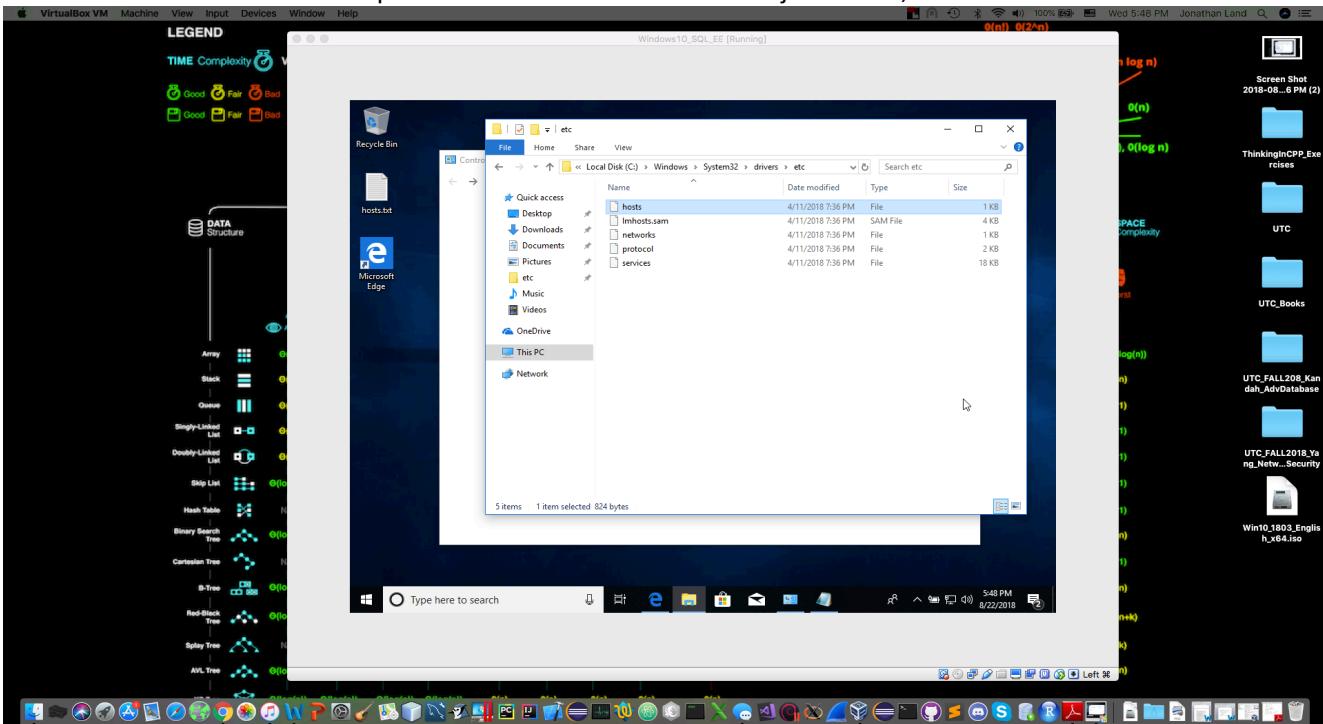




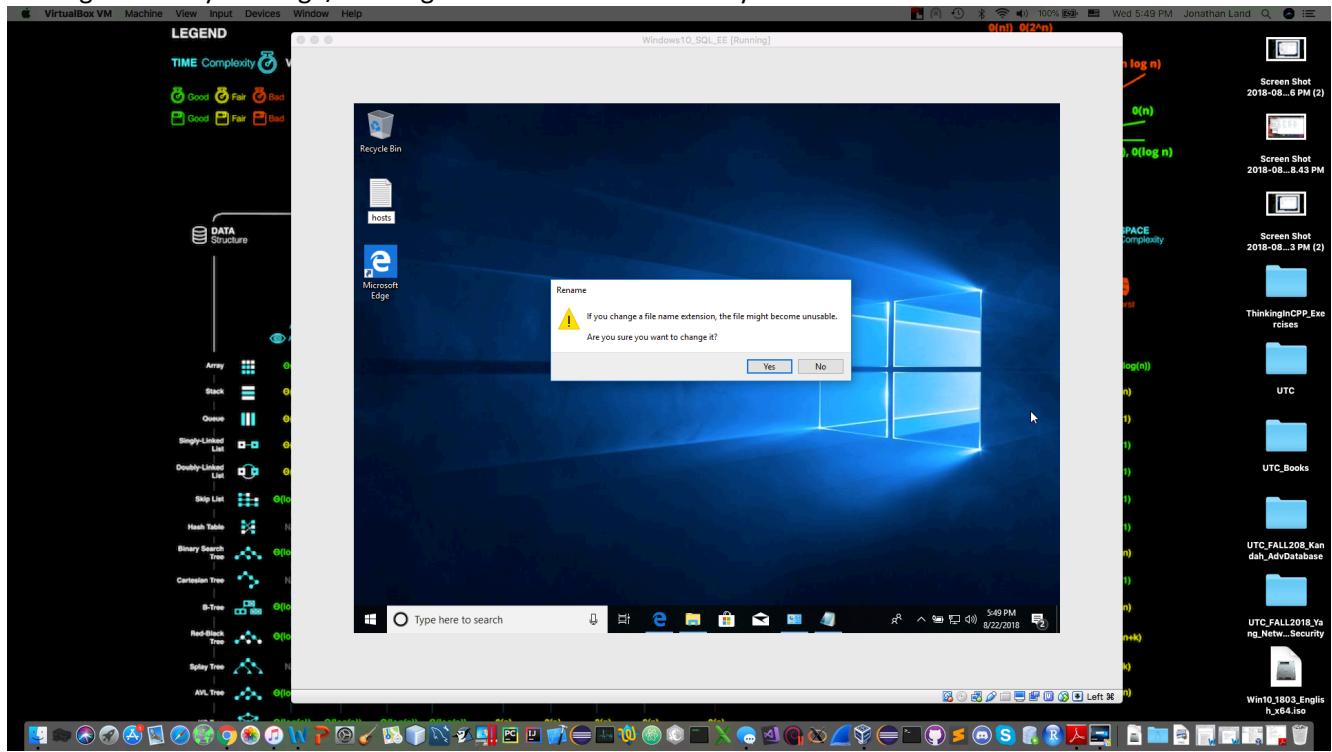
Uncheck “Hide extensions for known file types.” If you look on the desktop where you hosts file is now, you will see that the hosts file is now hosts.txt as shown in the next ss.



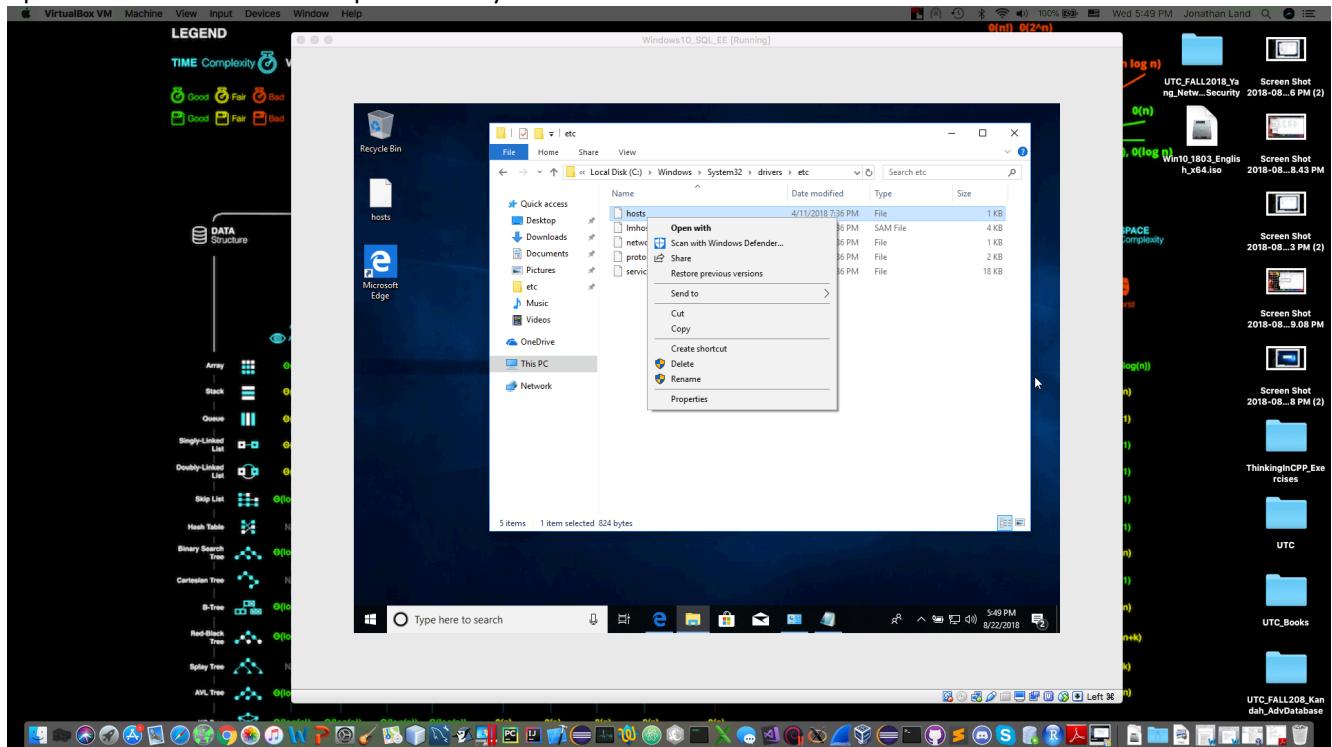
Click on hosts.txt on the desktop and edit out the .txt so that it is just called, **hosts** and not hosts.txt.



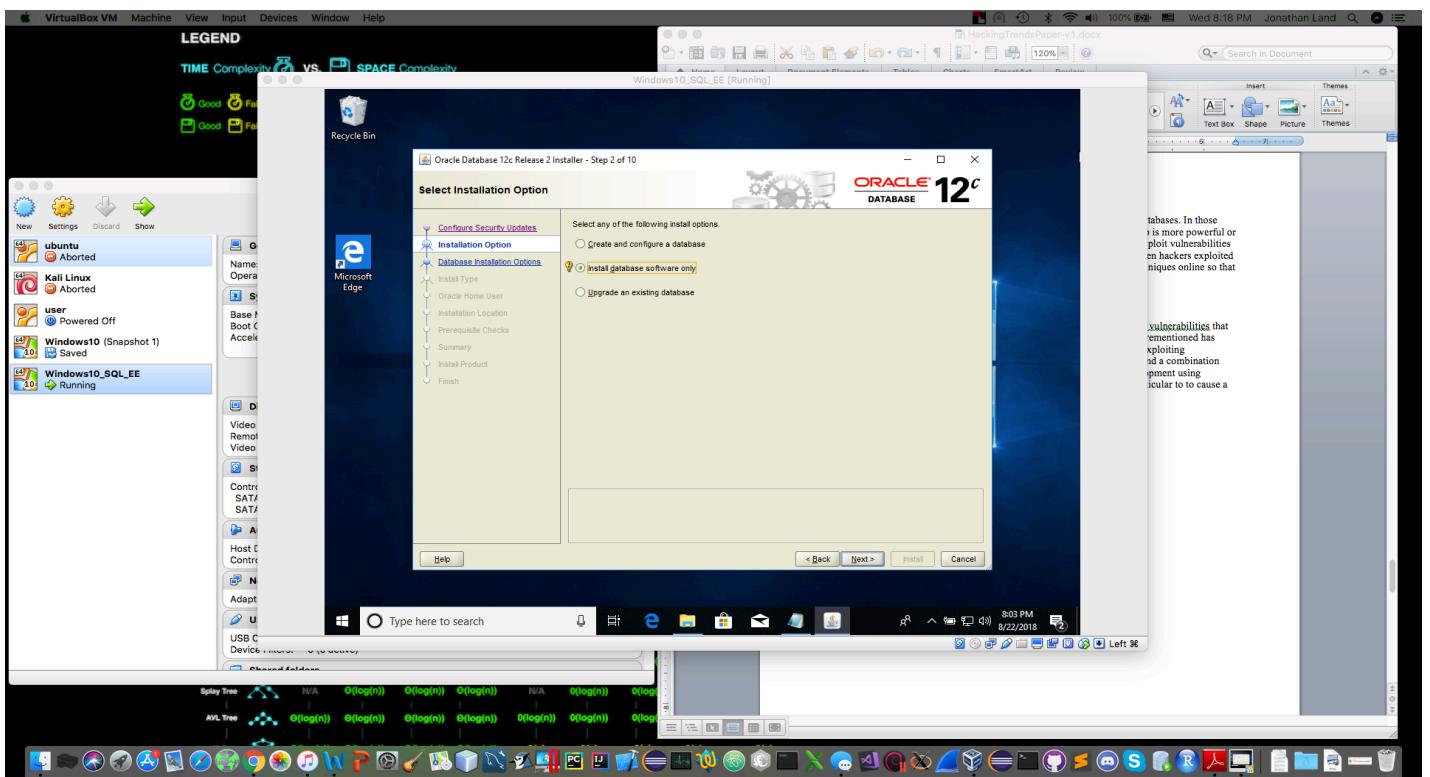
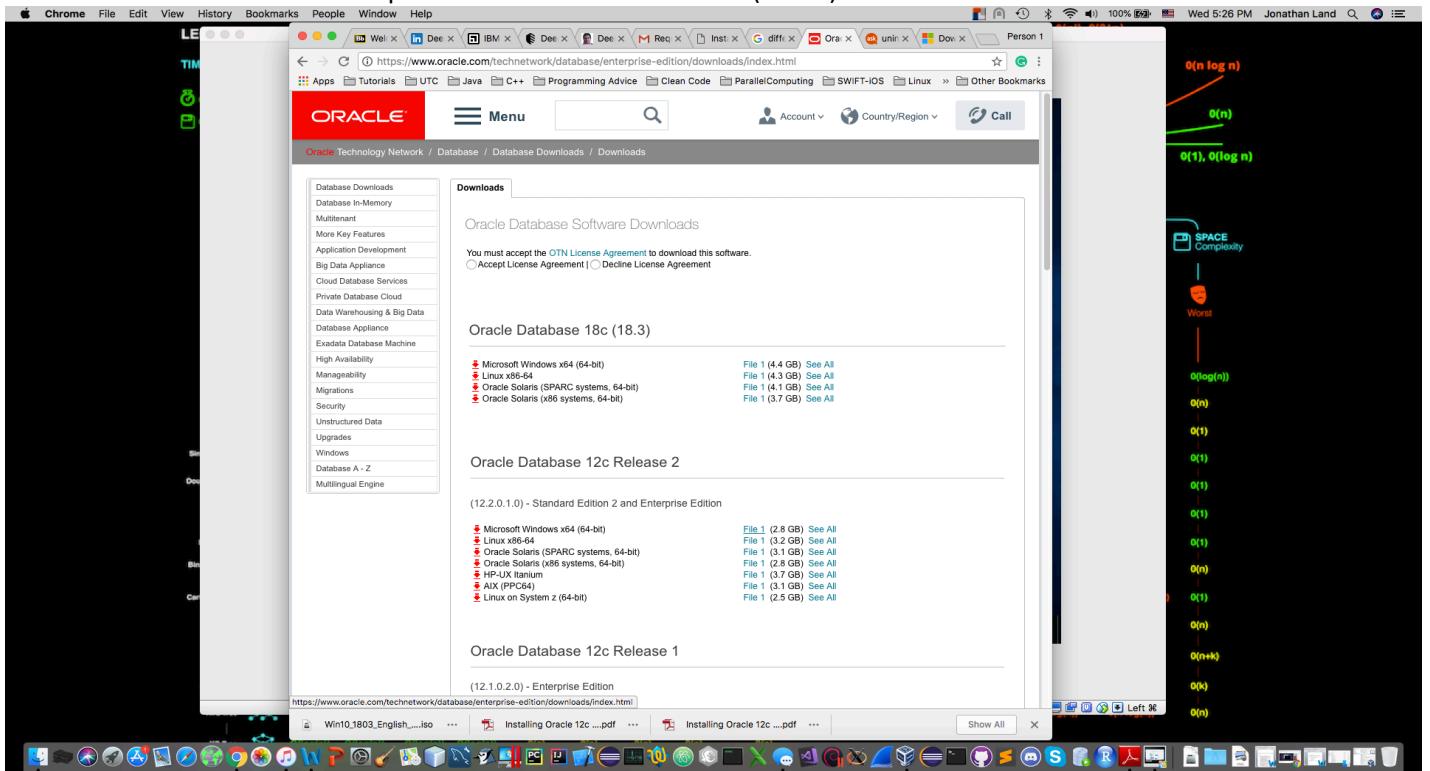
It will give a scary message/warning. This is normal. Just click yes.

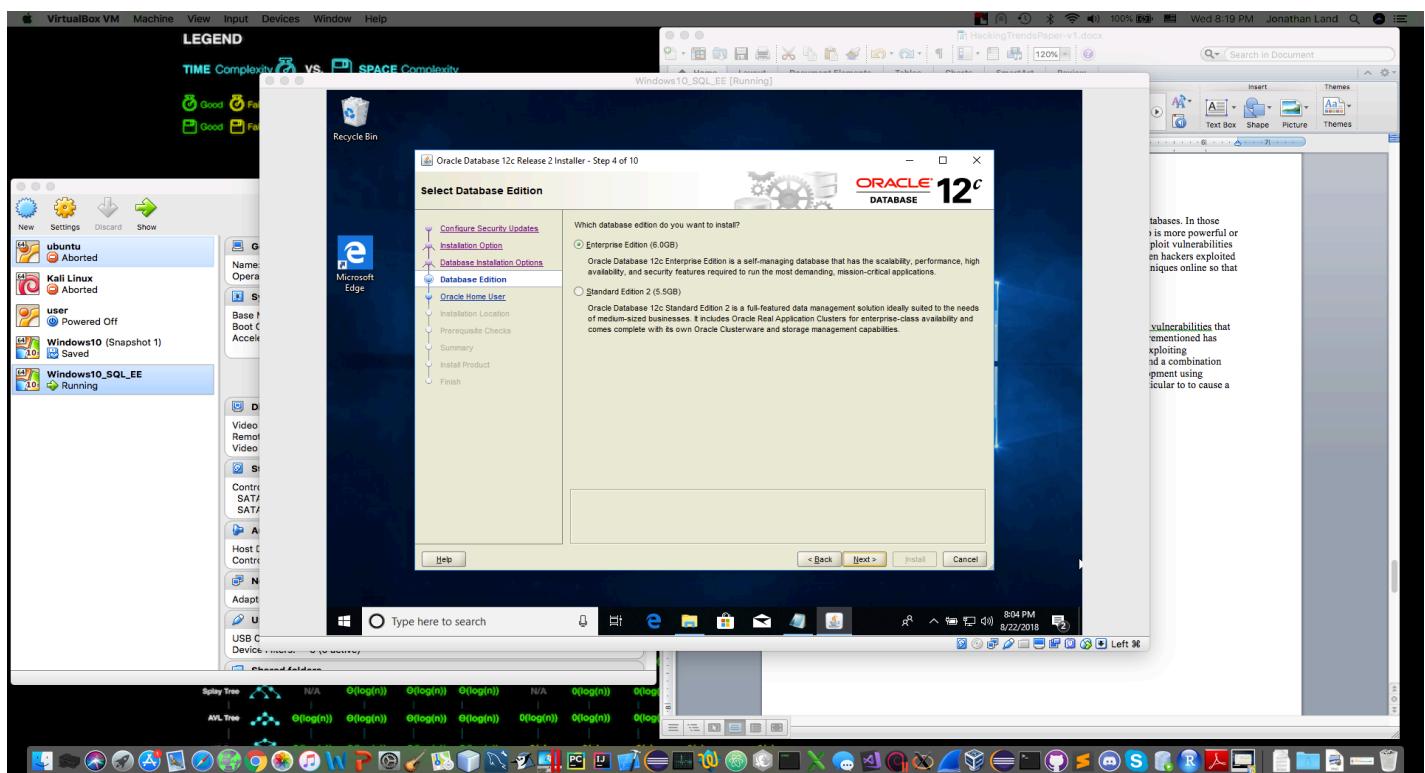
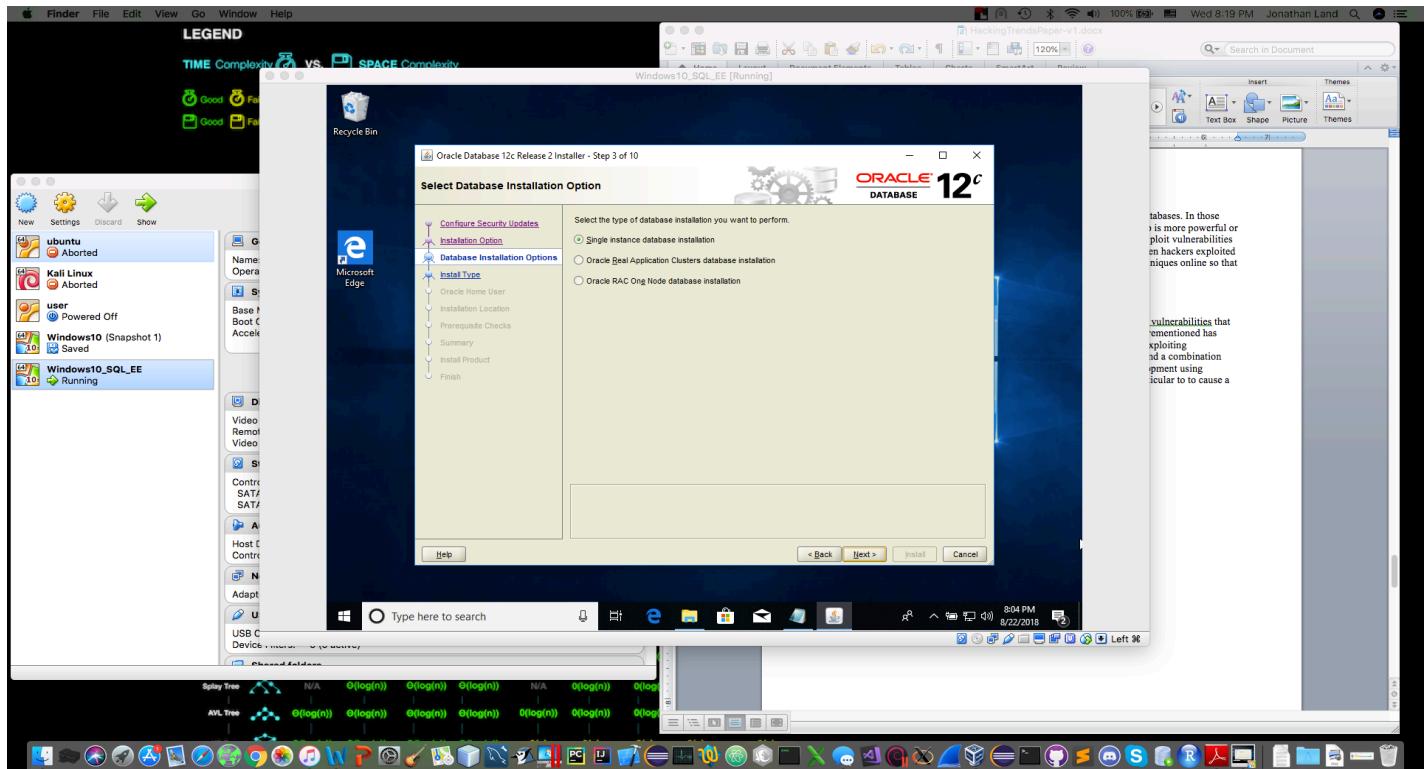


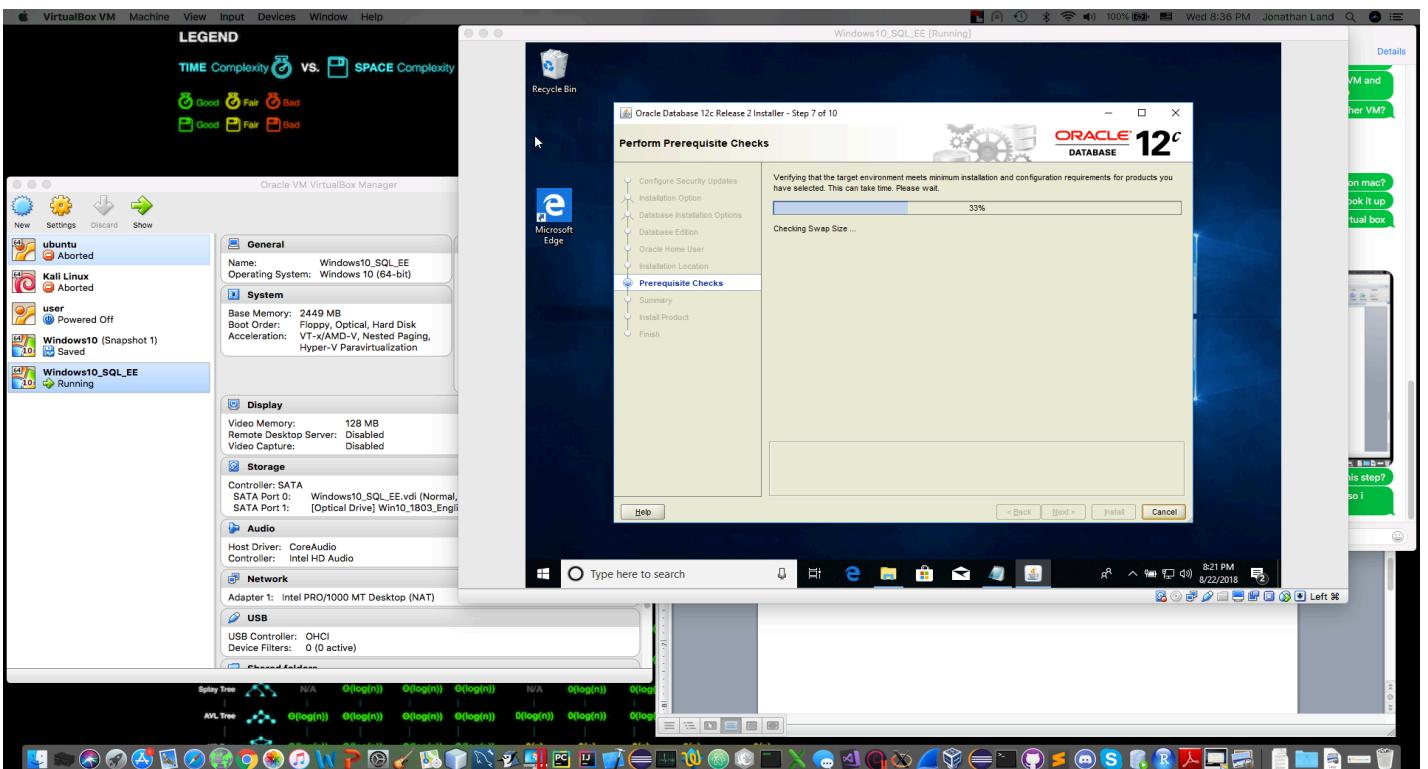
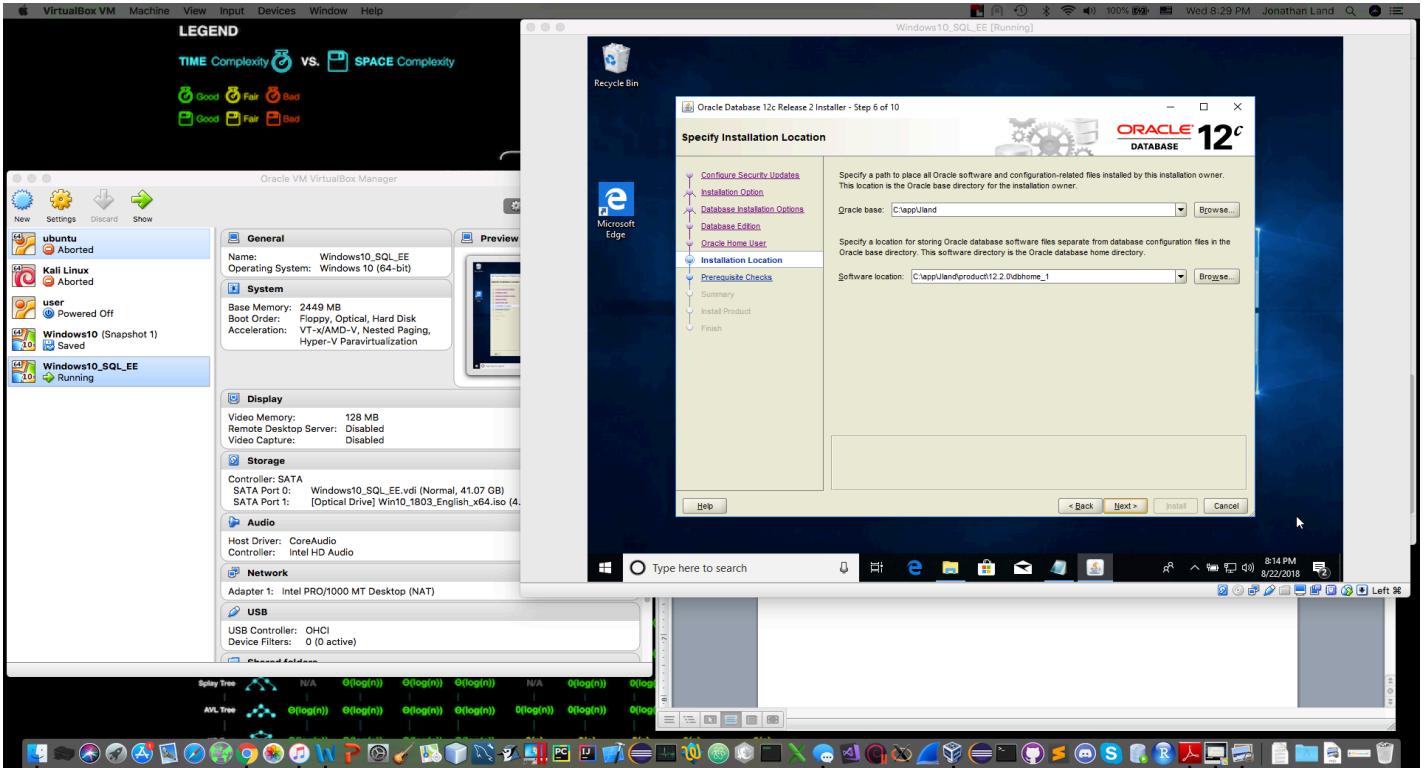
Now delete the old hosts file and drag the new hosts file (the one on the desktop) to replace this one). After this, open the hosts file with Notepad to verify.

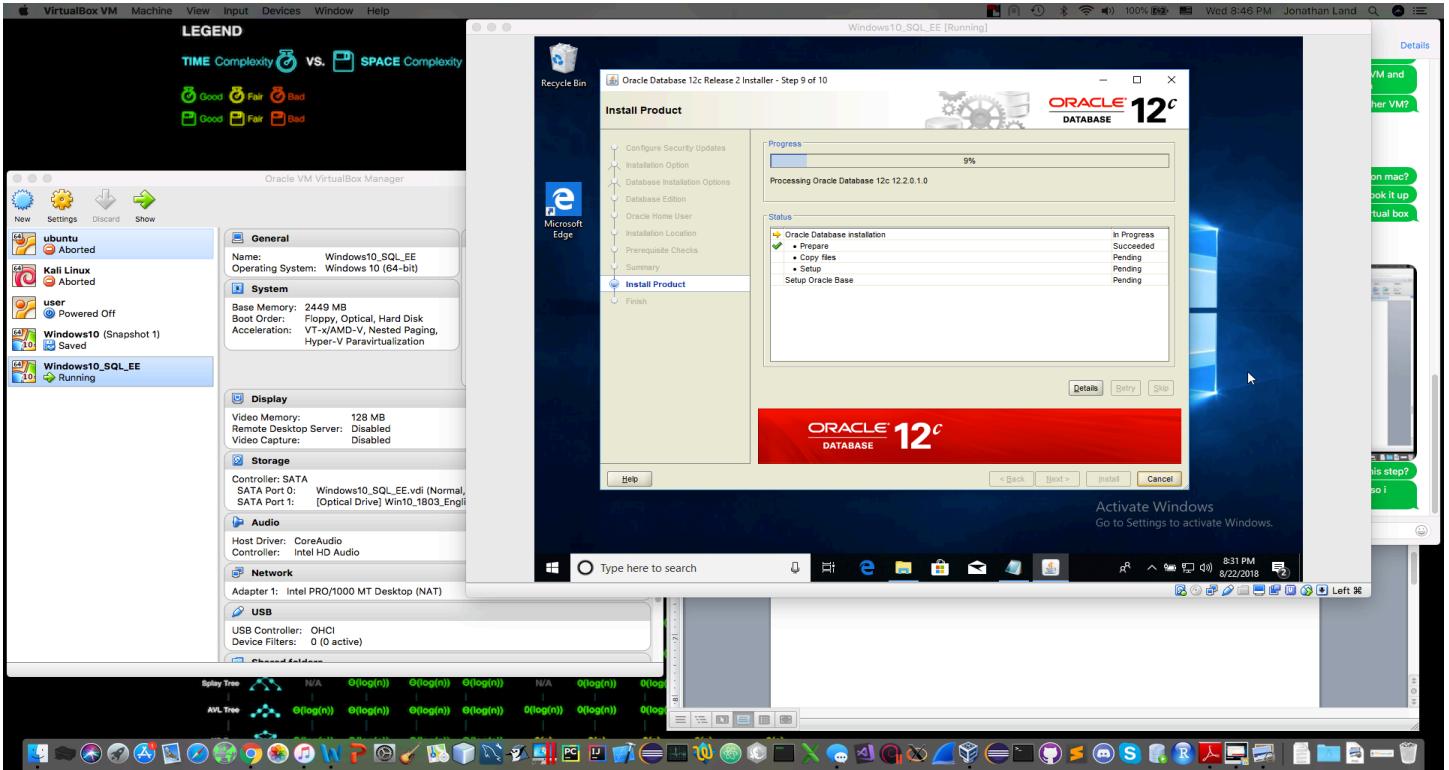


3. Install Oracle 12c Enterprise Edition for Windows x64 (64 bit). This can take a while.

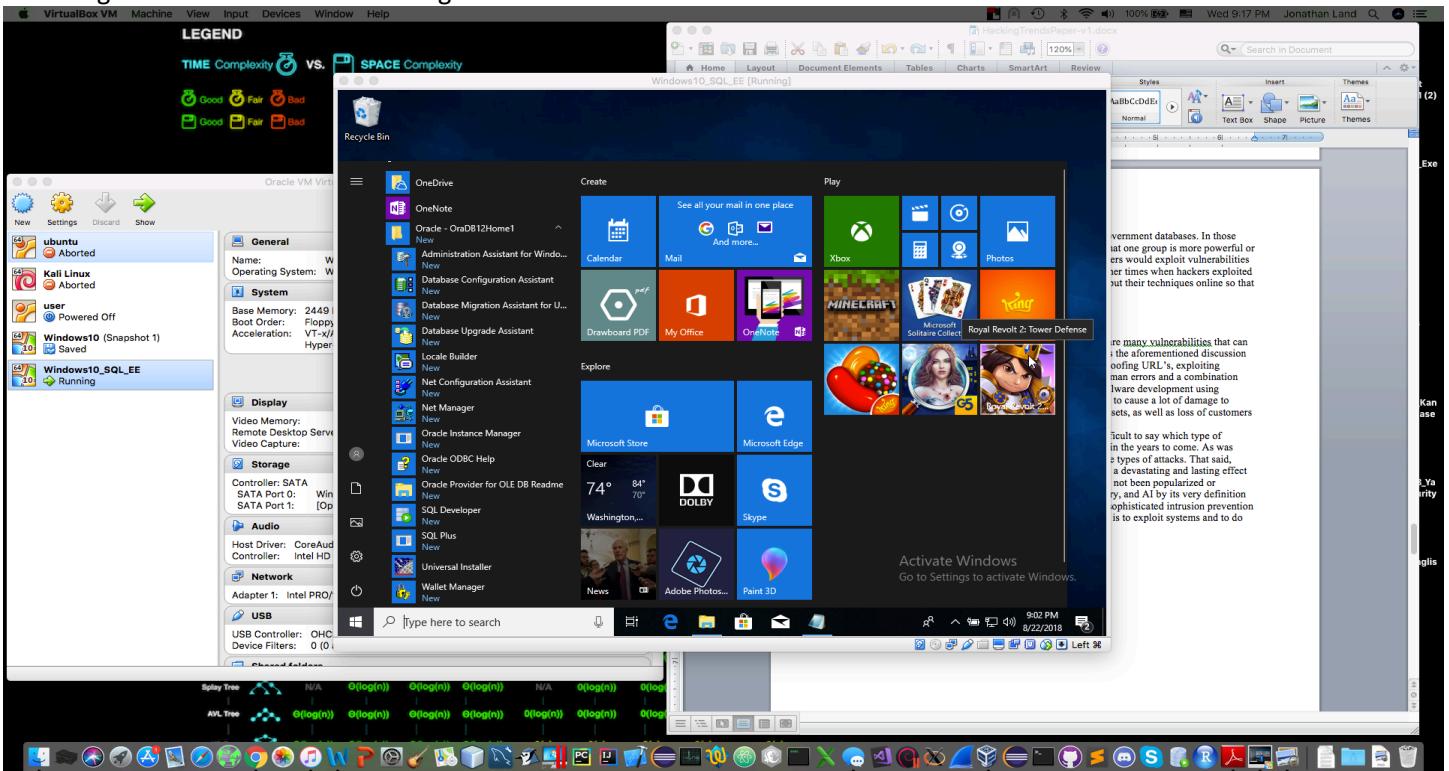


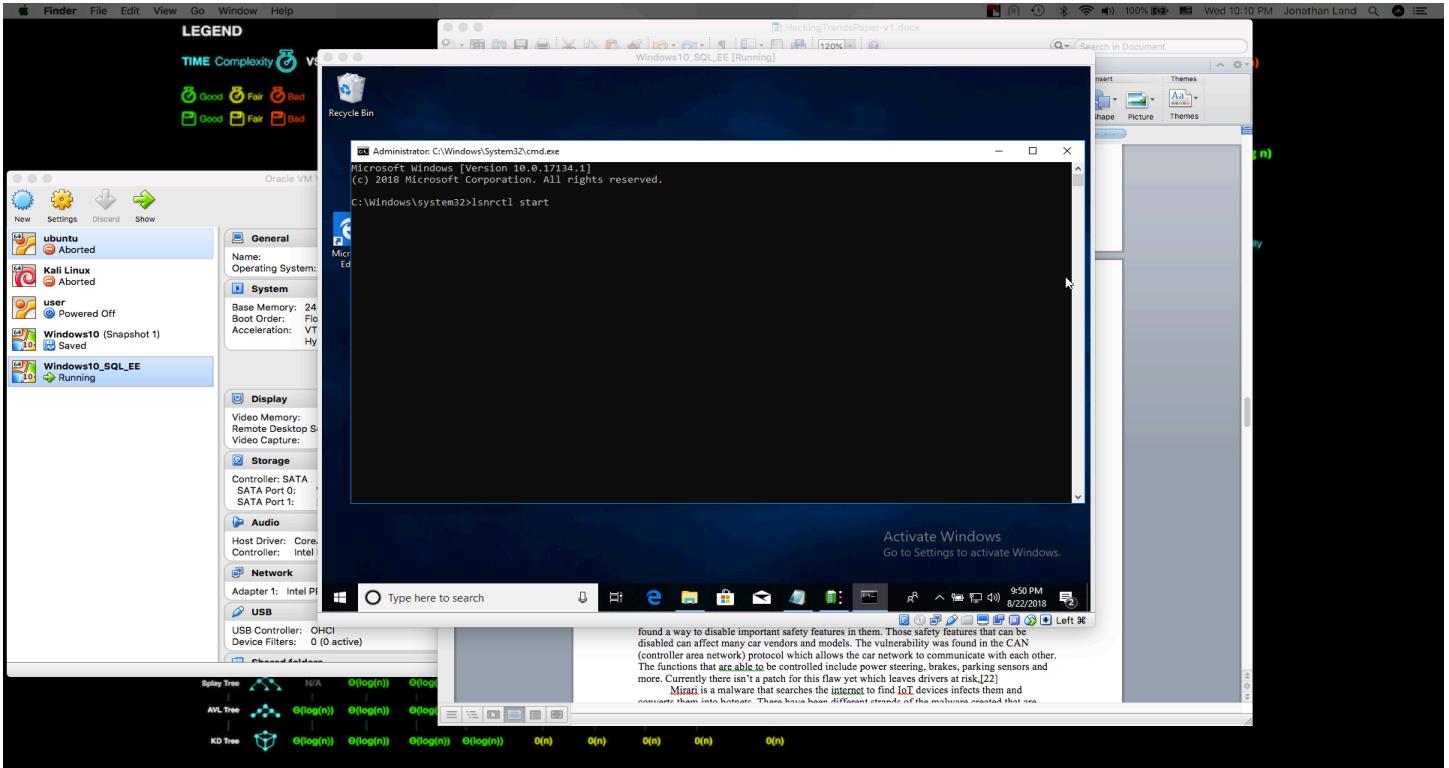




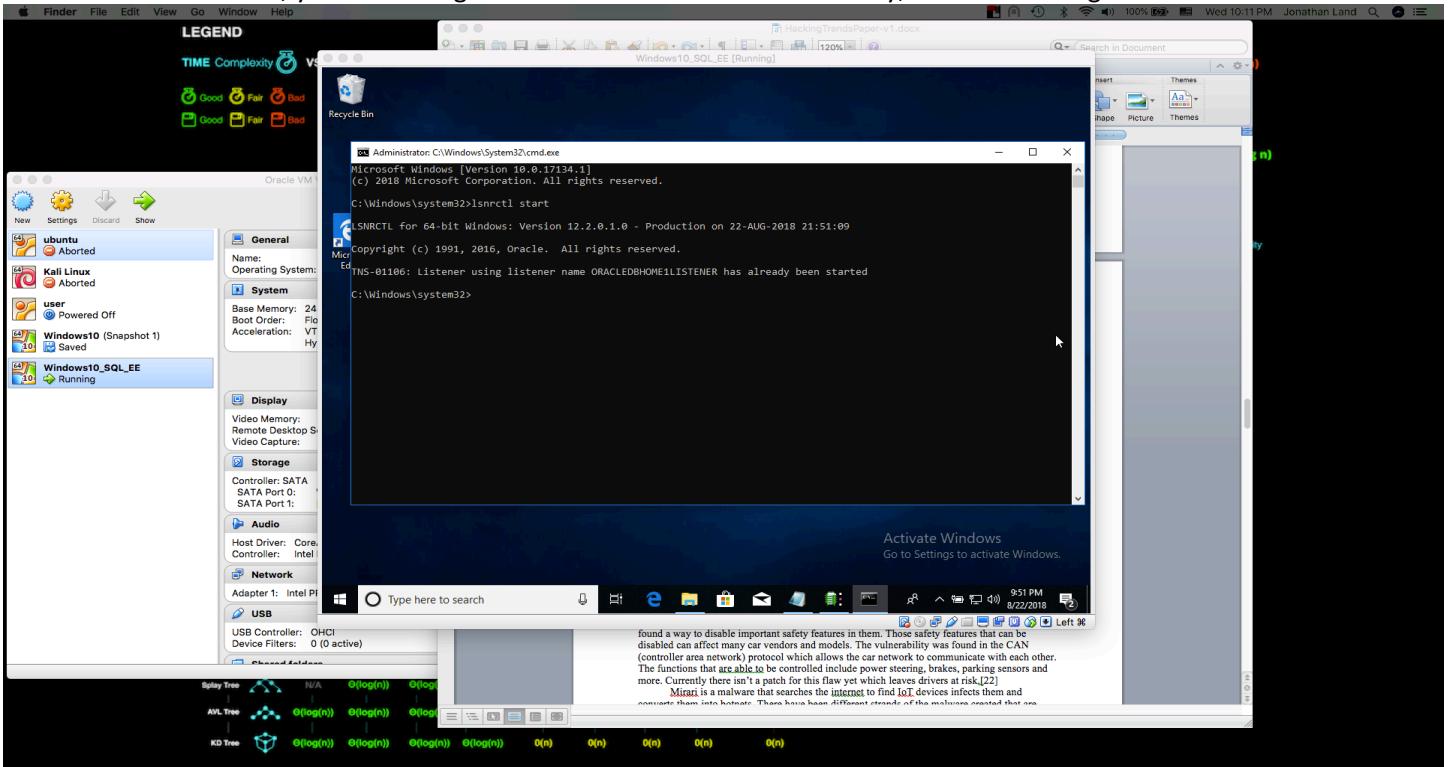


Checking to see if database is running on automatic or not via cmd line.

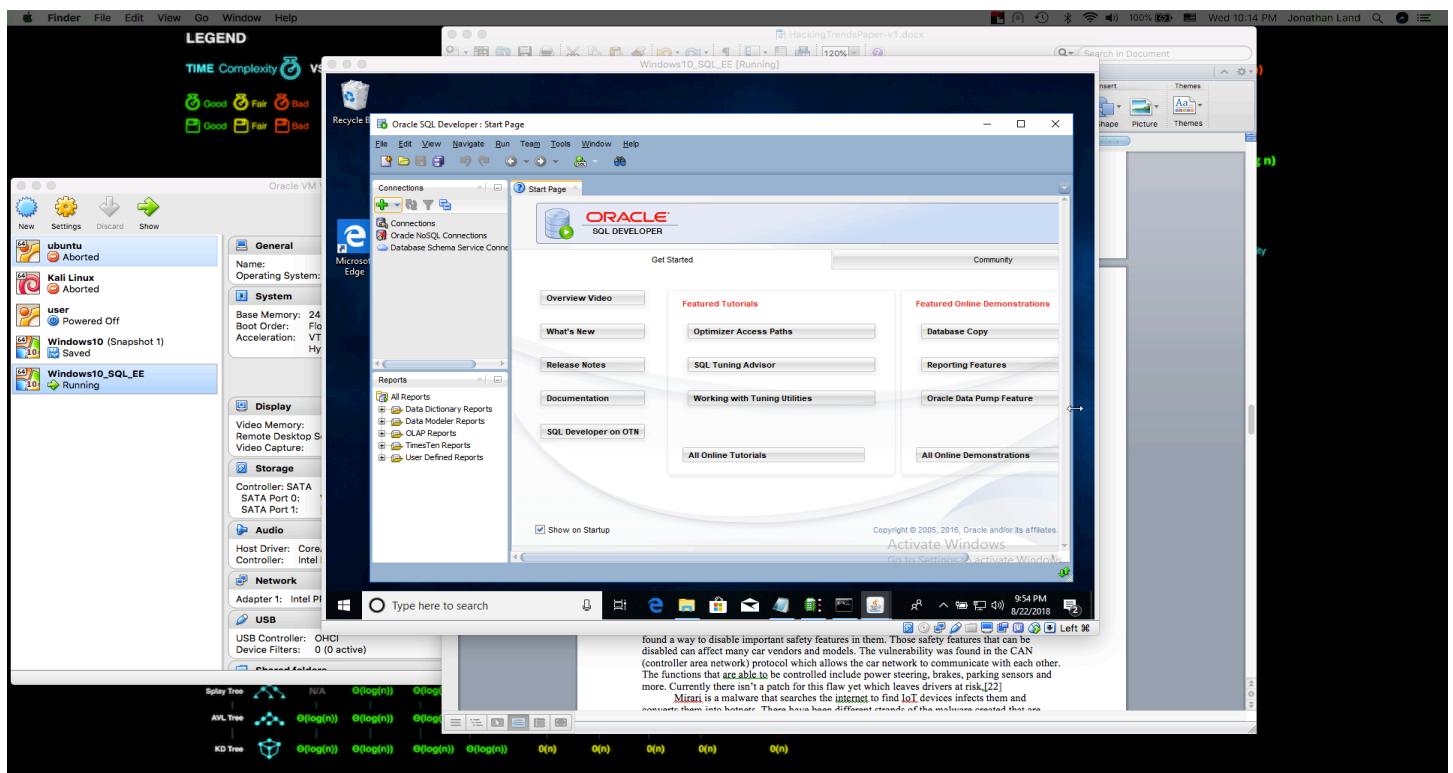
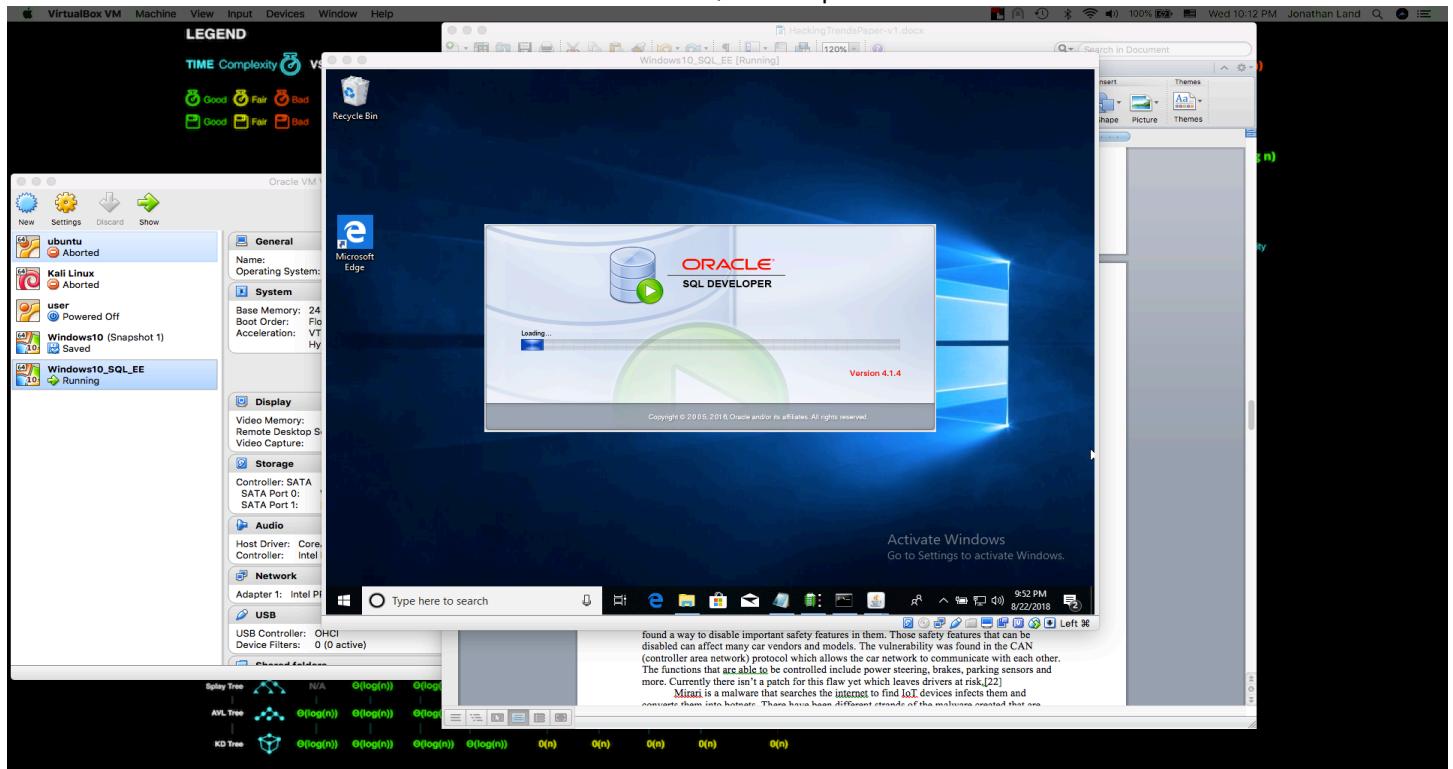




As discussed in the PDF, you can configure the listener to run automatically, as the following ss shows.

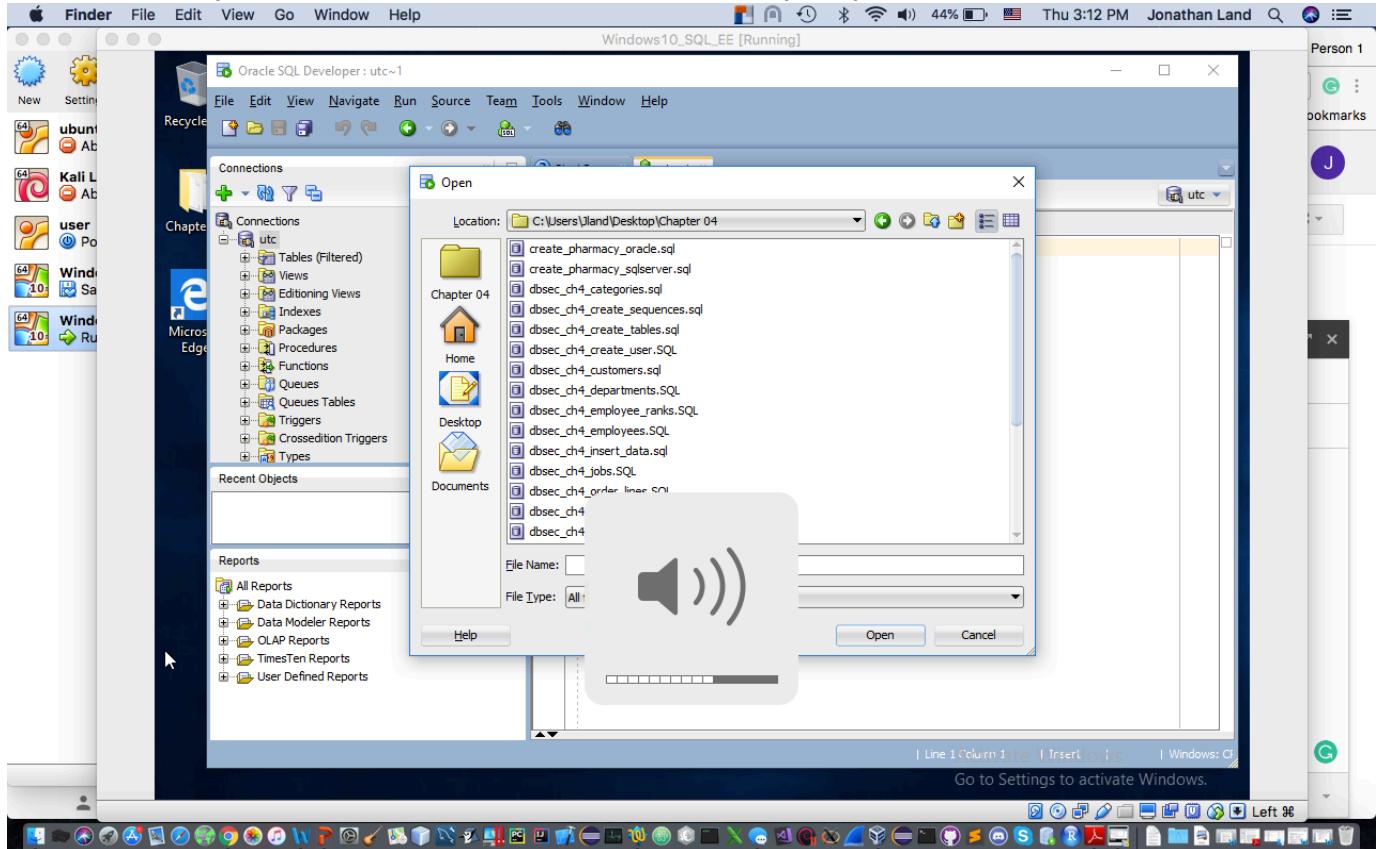


Go back to the search bar at the bottom left and click on SQL Developer to start the Database.



4. After creating the utc connection, now load the sql files from ch4 zip file. File > open > find extracted files > open the ones that are relevant to the queries you will be running (e.g., maybe open the create files first, and the go from there) > click ok when it asks what connection to use, which is utc (see ss below).

NOTE: After opening the file, click on “run script” in sql developer box. It is right next the green arrow (run). If you do not do this, it will not load the data for your queries.



Screenshot 1: Oracle SQL Developer window showing the creation of sequences.

The Oracle SQL Developer interface is displayed on a Mac OS X desktop. A modal dialog titled "Select Connection" is open, prompting the user to choose a connection. The connection dropdown is set to "utc". The main workspace shows the following SQL code in the Worksheet tab:

```

create sequence sq_CAT;
create sequence sq_CUS;
create sequence sq_DEP;
create sequence sq_EMP;

create sequence sq_PM;
create sequence sq_SAL;
create sequence sq_SHI;
create sequence sq_SUP;

```

The status bar at the bottom indicates "Windows: C:\Windows\system32\cmd.exe" and "Left: 96".

Screenshot 2: Oracle SQL Developer window showing the insertion of data into the JOBS table.

The Oracle SQL Developer interface is displayed on a Mac OS X desktop. The main workspace shows the following SQL code in the Worksheet tab:

```

INSERT INTO JOBS ( JOB_ID, JOB_DESCRIPTION ) VALUES (
1, 'Sales Director');
INSERT INTO JOBS ( JOB_ID, JOB_DESCRIPTION ) VALUES (
2, 'Receptionist');
INSERT INTO JOBS ( JOB_ID, JOB_DESCRIPTION ) VALUES (
3, 'Product Manager');
INSERT INTO JOBS ( JOB_ID, JOB_DESCRIPTION ) VALUES (
4, 'Marketing Operator');
INSERT INTO JOBS ( JOB_ID, JOB_DESCRIPTION ) VALUES (
5, 'Web Designer');
INSERT INTO JOBS ( JOB_ID, JOB_DESCRIPTION ) VALUES (
6, 'Customer Support');

```

The status bar at the bottom indicates "Windows: C:\Windows\system32\cmd.exe" and "Left: 96".

5. Run the specific SQL queries to get results asked for in the assignment:
- Count the number of unique department

```
SELECT COUNT (DISTINCT Department_Name)
FROM DEPARTMENTS;
```

The screenshot shows the Oracle SQL Developer interface on a Mac OS X desktop. The title bar says "Windows10_SQL_EE [Running]". The main window has a "Worksheet" tab selected, displaying the SQL query. Below it is a "Query Result" window showing the output of the query. The sidebar on the left shows connections named "Connections" and "Recent Objects". The status bar at the bottom right shows "Thu 3:49 PM Jonathan Land".

	COUNT(DISTINCT DEPARTMENT_NAME)
1	14

- Query an order

```
SELECT * FROM ORDERS;
```

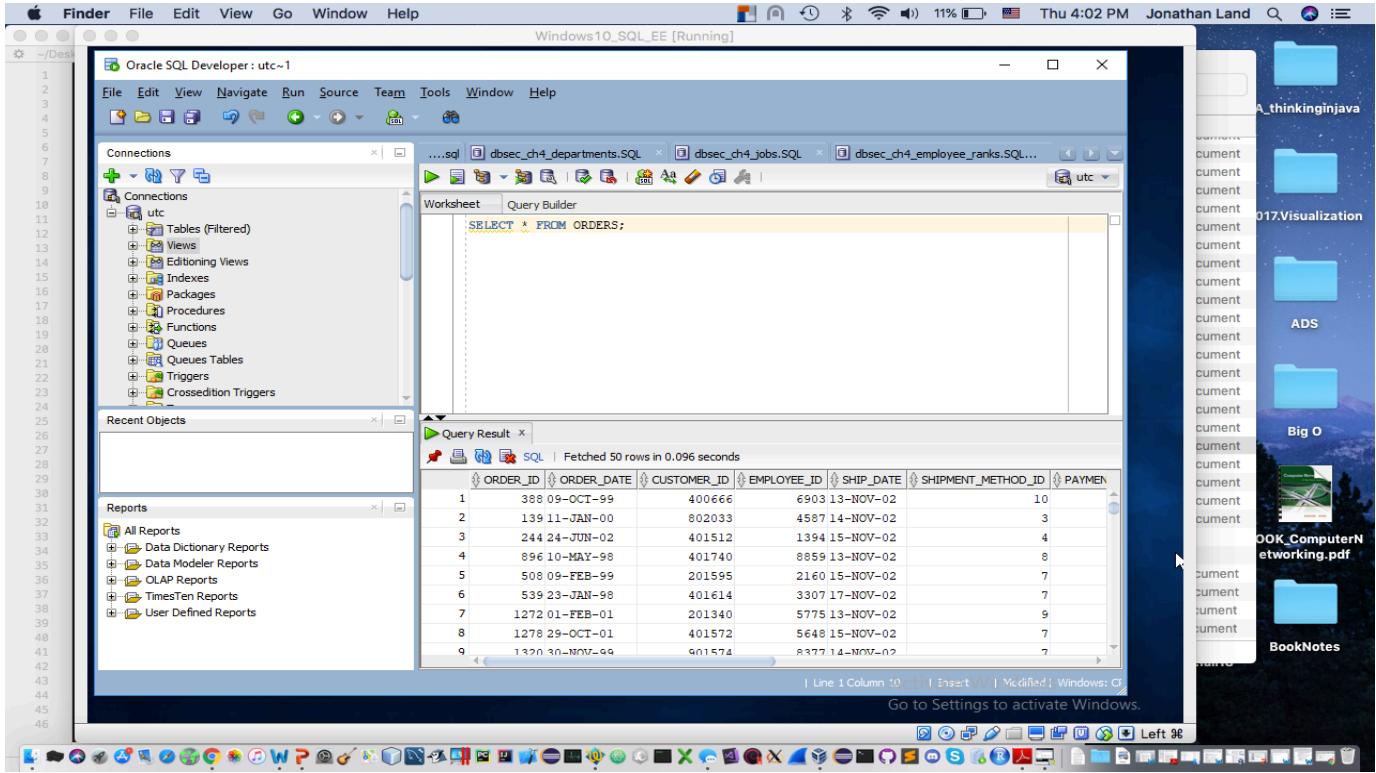
The screenshot shows the Oracle SQL Developer interface on a Mac OS X desktop. The title bar says "Windows10_SQL_EE [Running]". The main window has a "Worksheet" tab selected, displaying several "INSERT INTO ORDERS" statements. Below it is a "Script Output" window showing the results of the execution. The sidebar on the left shows connections named "Connections" and "Recent Objects". The status bar at the bottom right shows "Thu 3:56 PM Jonathan Land".

```

1 row inserted.

1 row inserted.

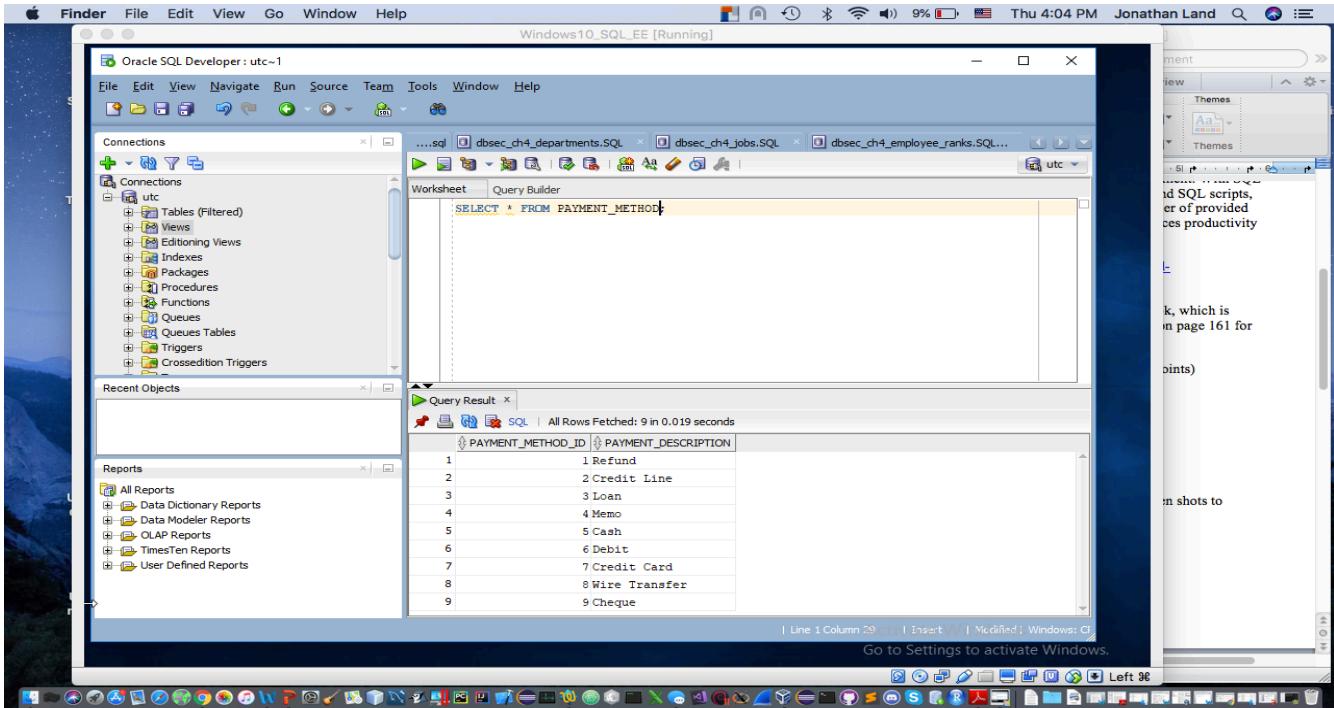
Commit complete.
```



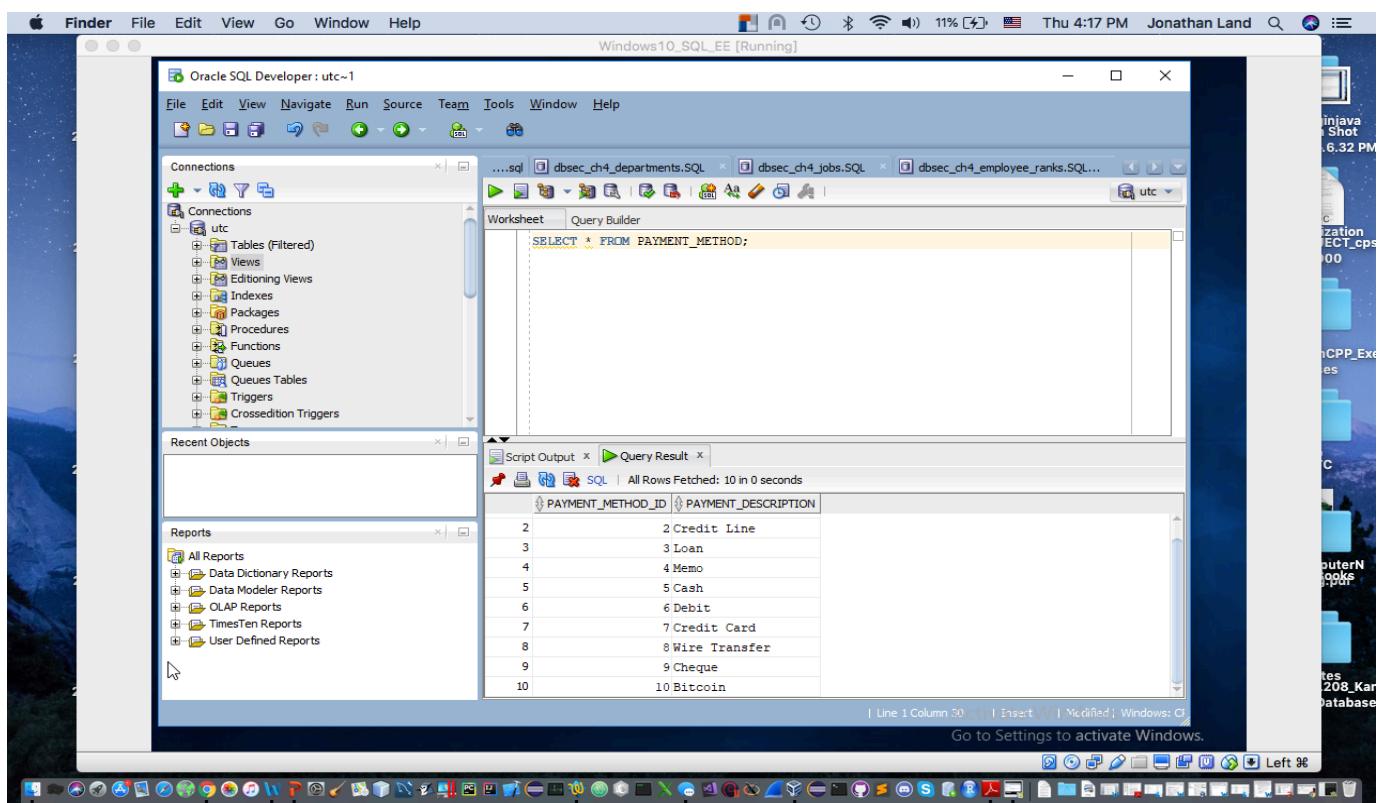
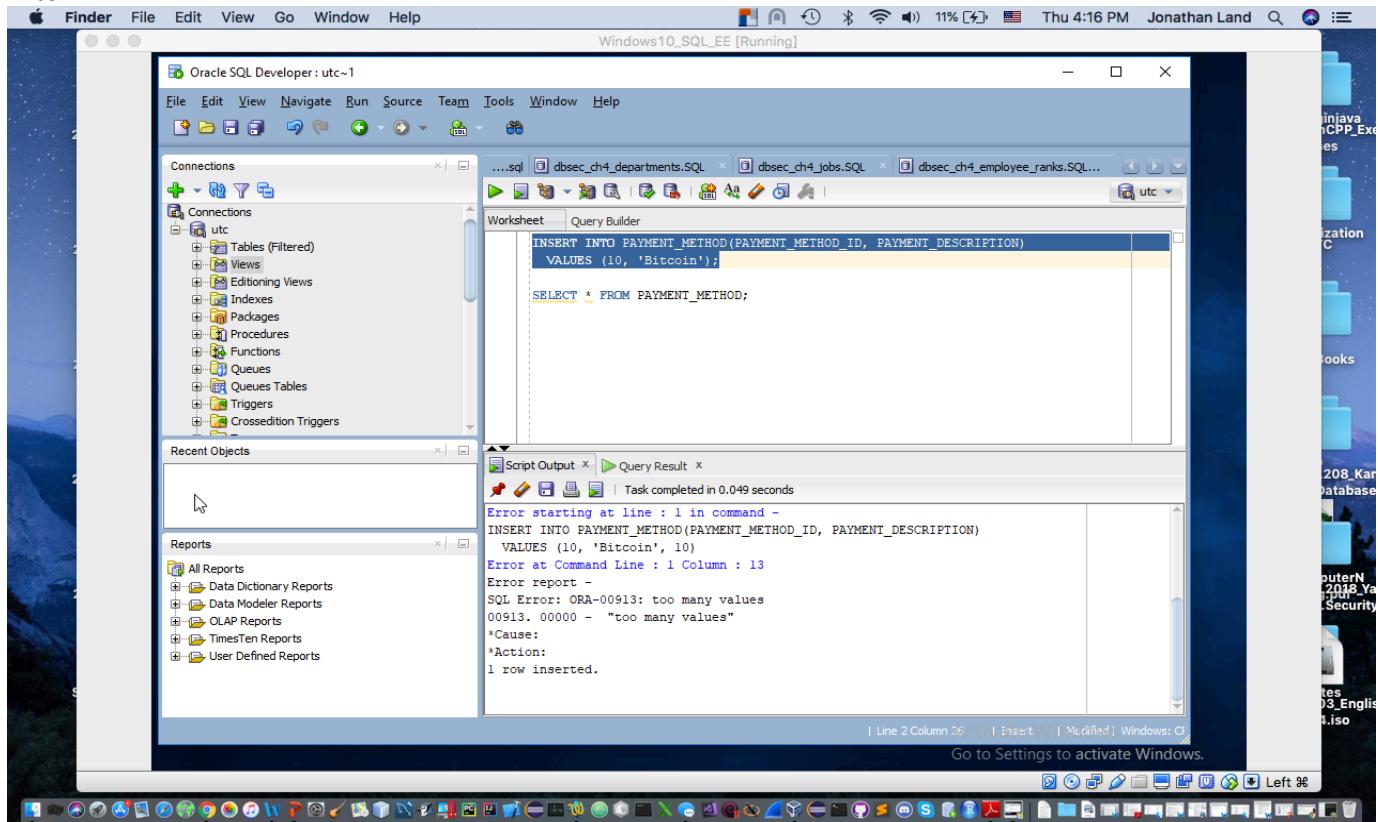
c. Insert a payment method

```
INSERT INTO PAYMENT_METHOD (PAYMENT_METHOD_ID, PAYMENT_DESCRIPTION)
VALUES (10, 'Bitcoin');
```

Before

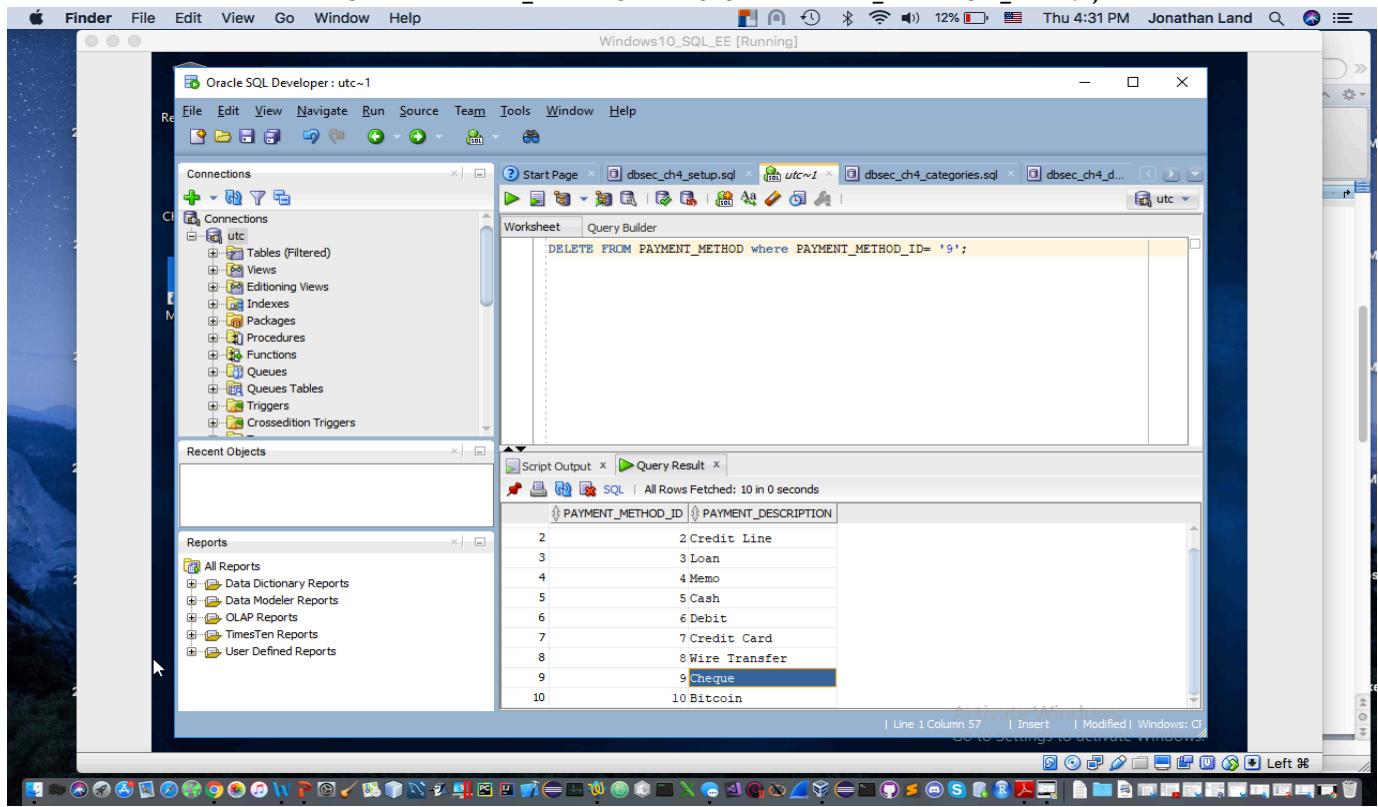


After



d. Delete a product

`DELETE FROM PAYMENT_METHOD where PAYMENT_METHOD_ID= '9';`



Deleted cheque

