Solution to Laboratory Week 7.

The files for this lab can be found in the folder
/KDrive/SEH/SCSIT/Students/Courses/COSC2111/DataMining/ /code-and-scripts/parking-time.sh
/data/parking-small.csv

1.Using PUTTY with X11 forwarding, open up a bash window to jupiter.csit.rmit.edu.au and log in. You can find detailed instructions in the Canvas shell in the basic unix guide or in the first part of the recording of lecture 6.

First make sure you have activated Xming on your PC as shown in figure 1. If you do not have Xming on your laptop, you can download and install it through the following link:

For windows:

https://xming.en.softonic.com/?ex=BB-527.0

For mac user:

https://www.xquartz.org/

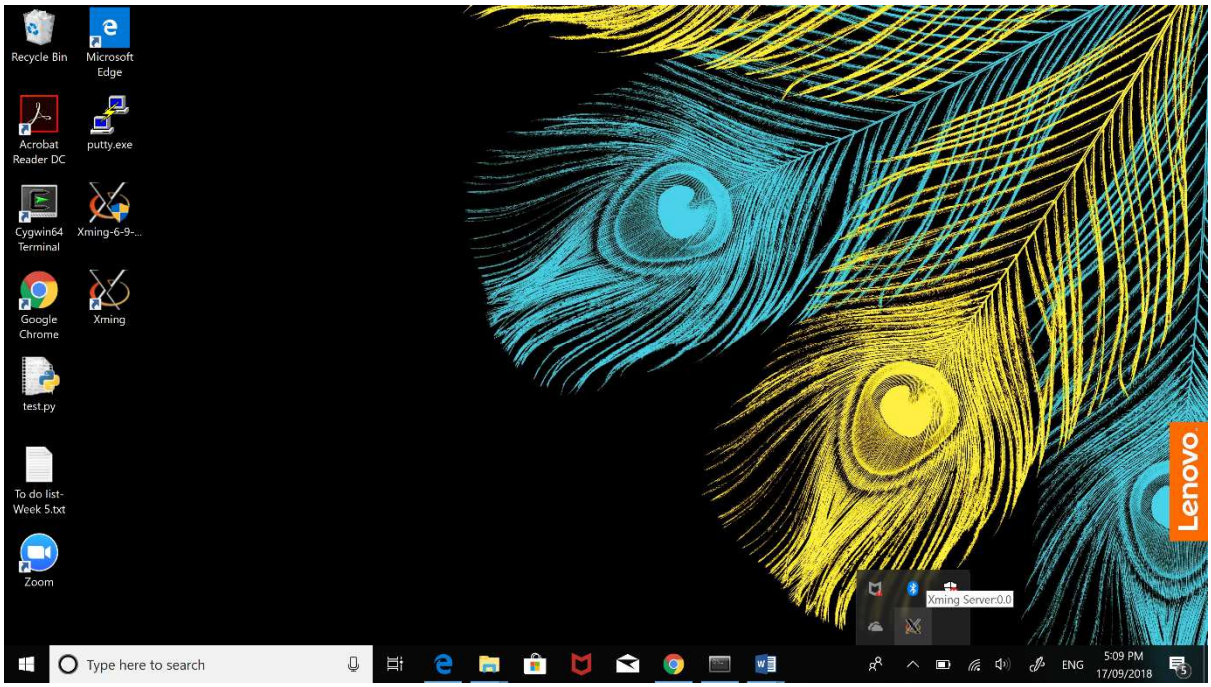


Figure 1. Activate Xming.

After making sure about activation of Xming, you can log in to any of RMIT's linux servers(titan or Jupiter) using Putty. If you do not have Putty on your PC, you can download and install it through the following link:

https://www.putty.org/

First you need to enable X11 on Putty from SSH-> X11 and then checking the Enable X11 forwarding as shown in the following figures.

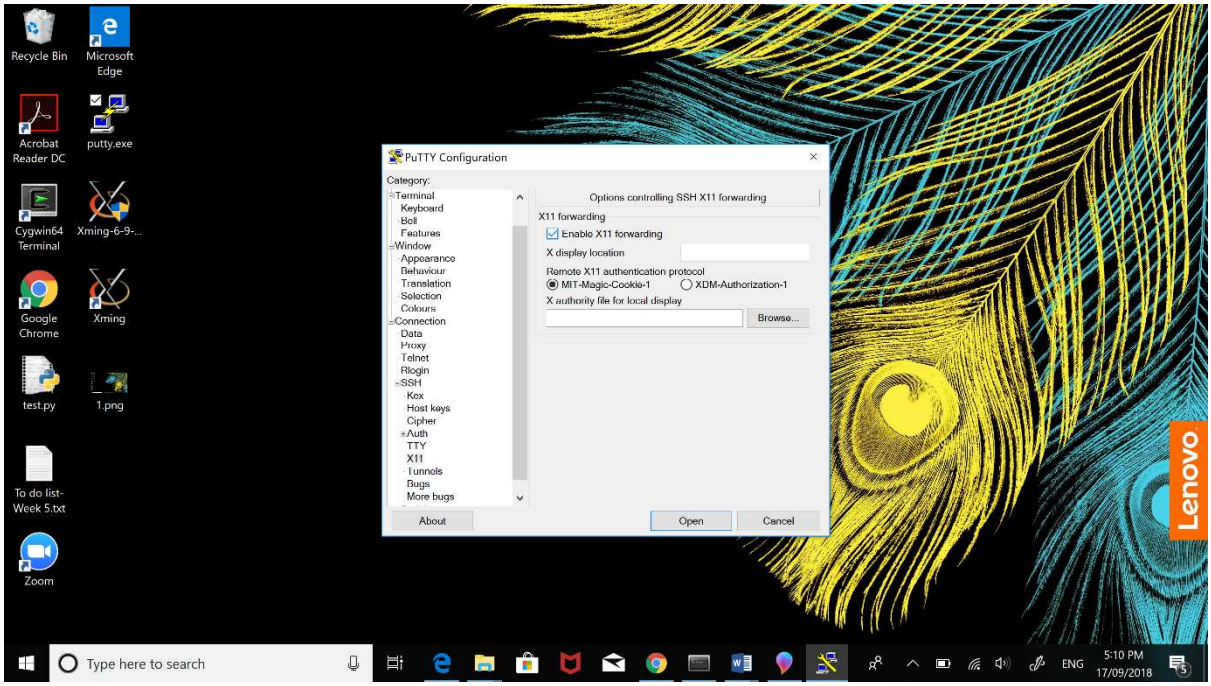


Figure 2. Enable X11 on Putty.

Then, you can go back to session and log in to server by typing “titan.csit.rmit.edu.au “ or Jupiter.csit.rmit.edu.au” in Host Name (or IP address) tab and click open.

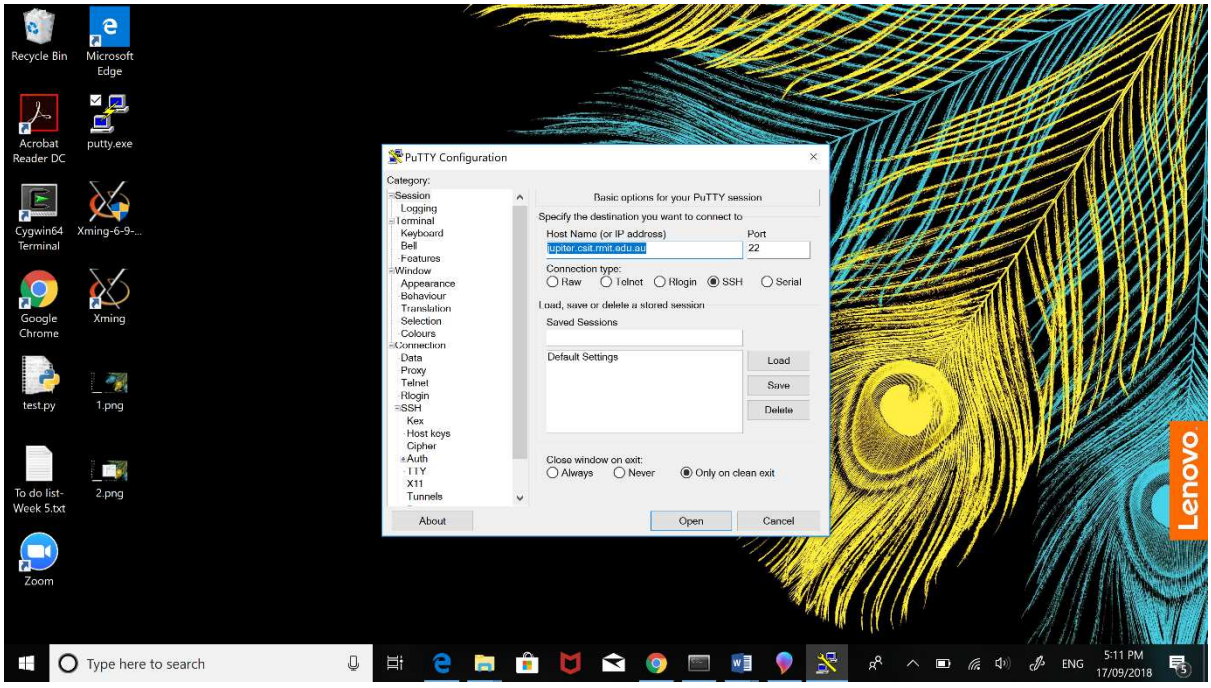


Figure 4. Key in name of RMIT’s linux server (titan or Jupiter) on Putty to log in to the server remotely.

Log in to sever for mac users:

First activate XQuartz.

If you are using mac, you can connect to the servers through your shell command by typing:

ssh -Y studentnumber@titan.csit.rmit.edu.au ,

where -Y enables X11.

If everything is going alright, you should be able to see the following command shell and type your RMIT user name and then your password, then click on yes and then connect to the server as shown in the following figures.

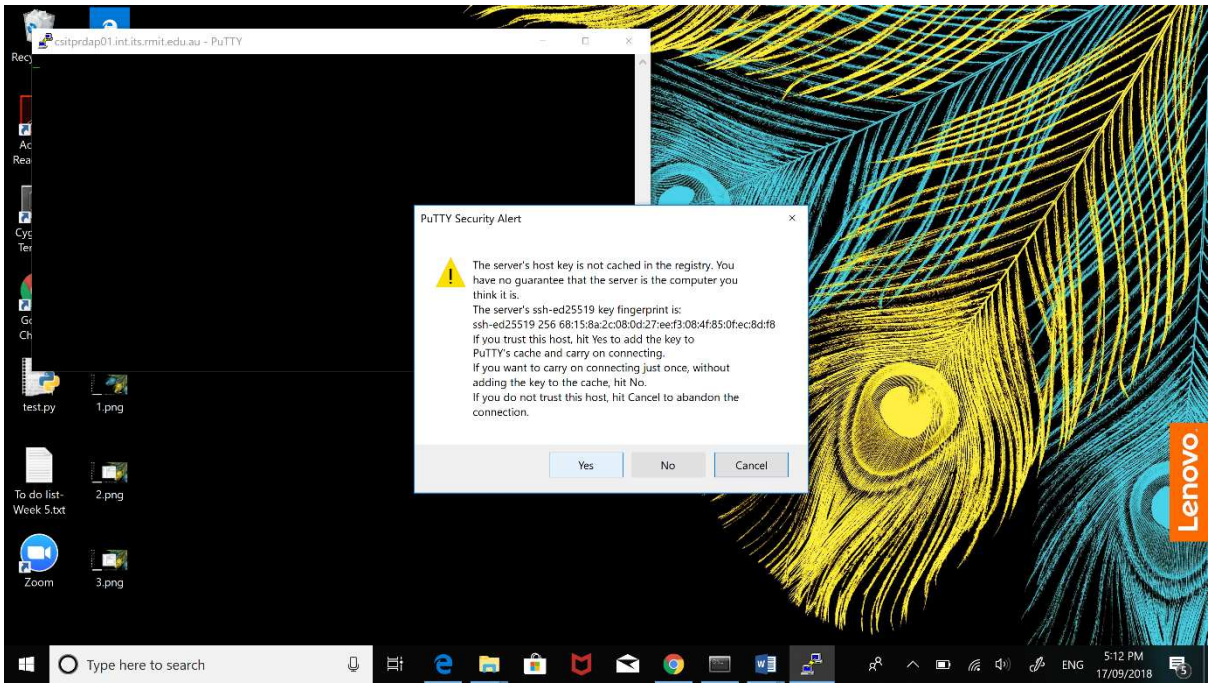


Figure 5.

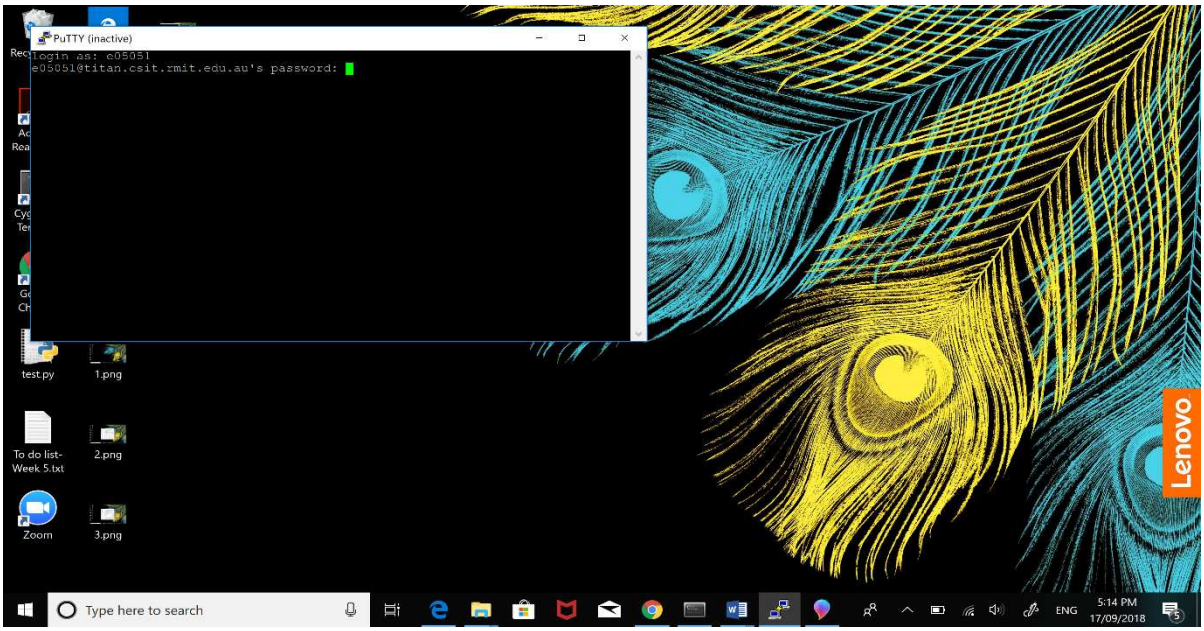


Fig 6.

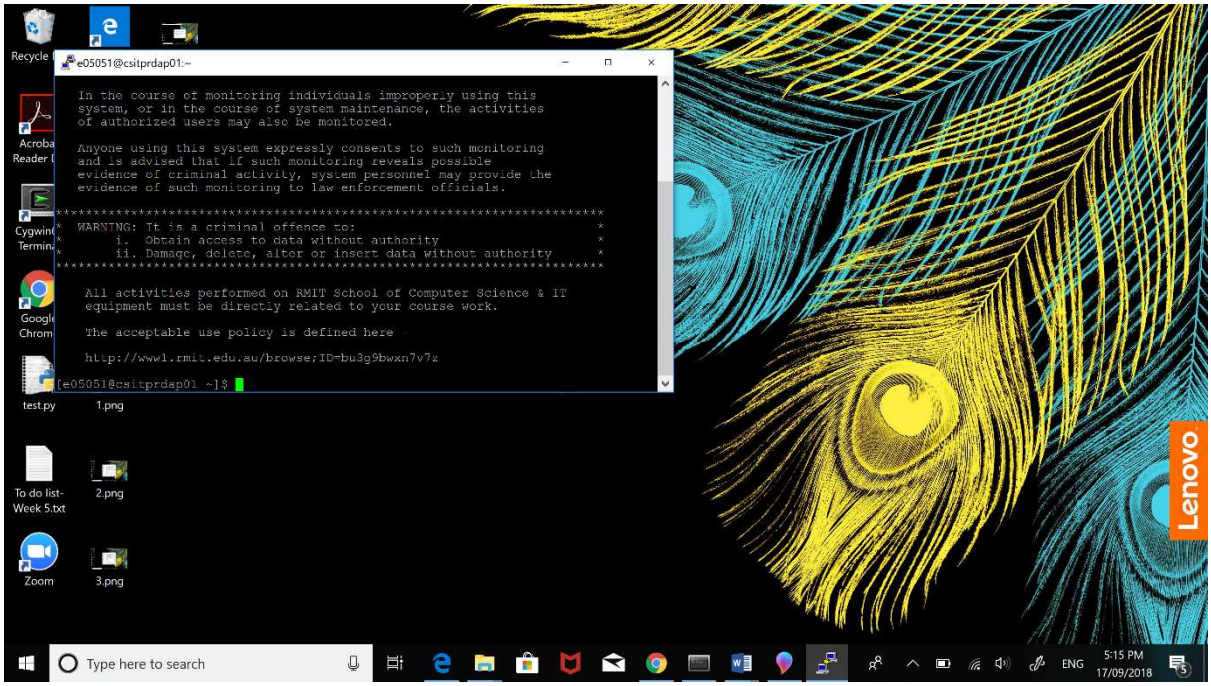


Figure 5-7. Snapshots of connecting to the Jupiter server.

STRONGLY RECOMMENDED: After you have logged in to the server key in “xeyes”& or “xclock”. If this command runs without error you have a working Xwindows connection.

2. If you haven’t already done so make a folder on HDrive for Data Mining, eg,

cd HDrive

mkdir DM

cd DM

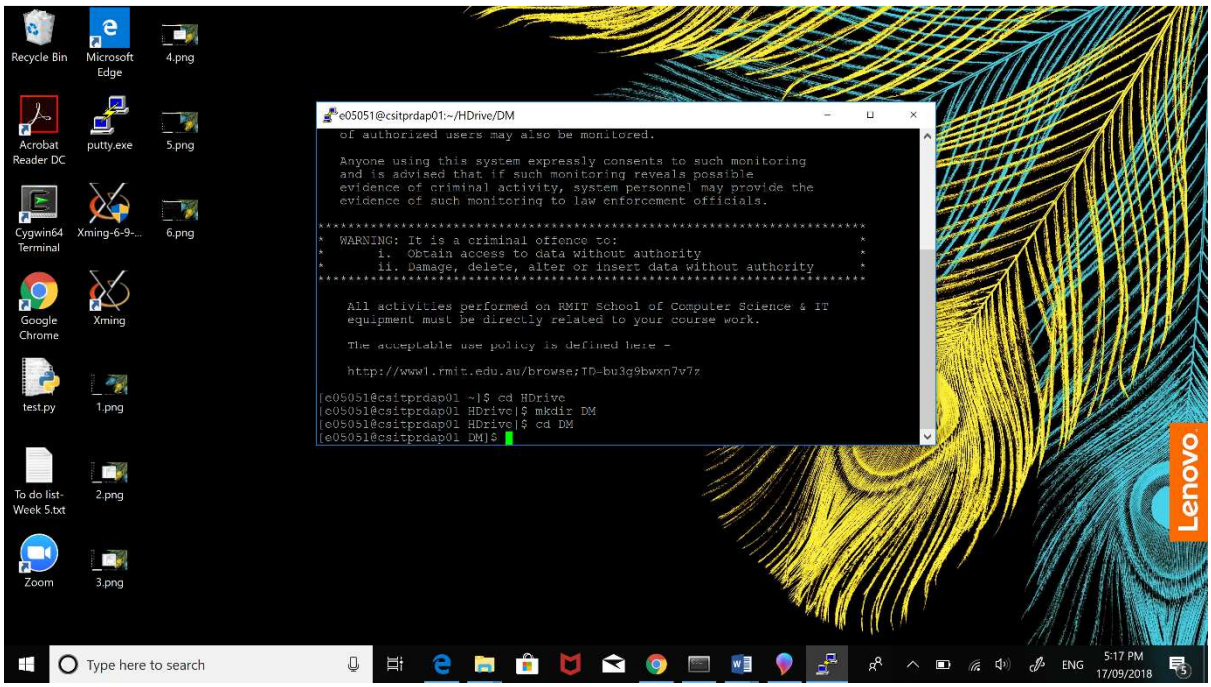


Figure 8. Change directory to HDrive, creating a new directory named DM in HDrive and changing the current directory to the new directory (DM).

Using mkdir DM command you have created a new folder with the name of DM, you can check it in your HDrive as shown in the following figure.

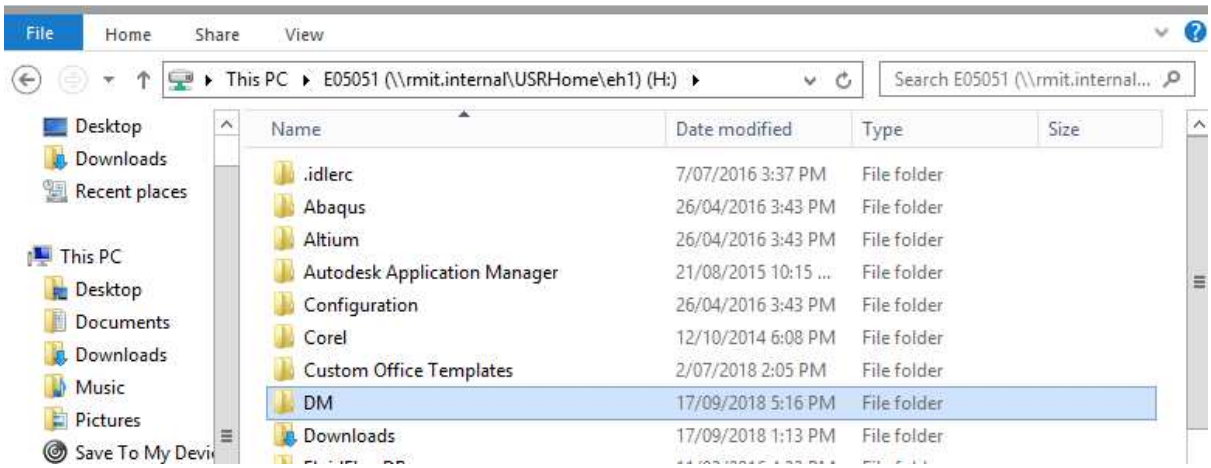


Figure 9. created directory as DM using above commands in HDrive.

3. Copy in the two files above: [Note: If you are cutting and pasting from a pdf of this file, be aware that the ˜ character might not be cut out properly]

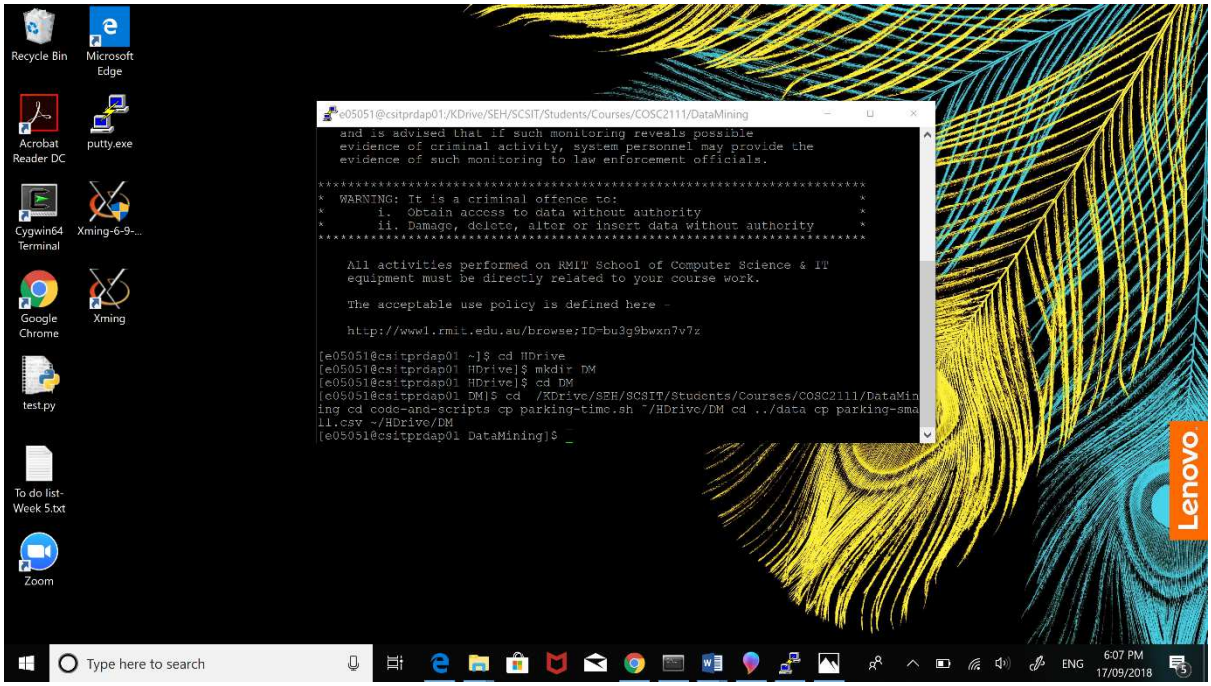
cd /KDrive/SEH/SCSIT/Students/Courses/COSC2111/DataMining

cd code-and-scripts

cp parking-time.sh ˜/HDrive/DM c

d ../data

cp parking-small.csv ~/HDrive/DM



4. Navigate to your DM folder on the HDrive

cd

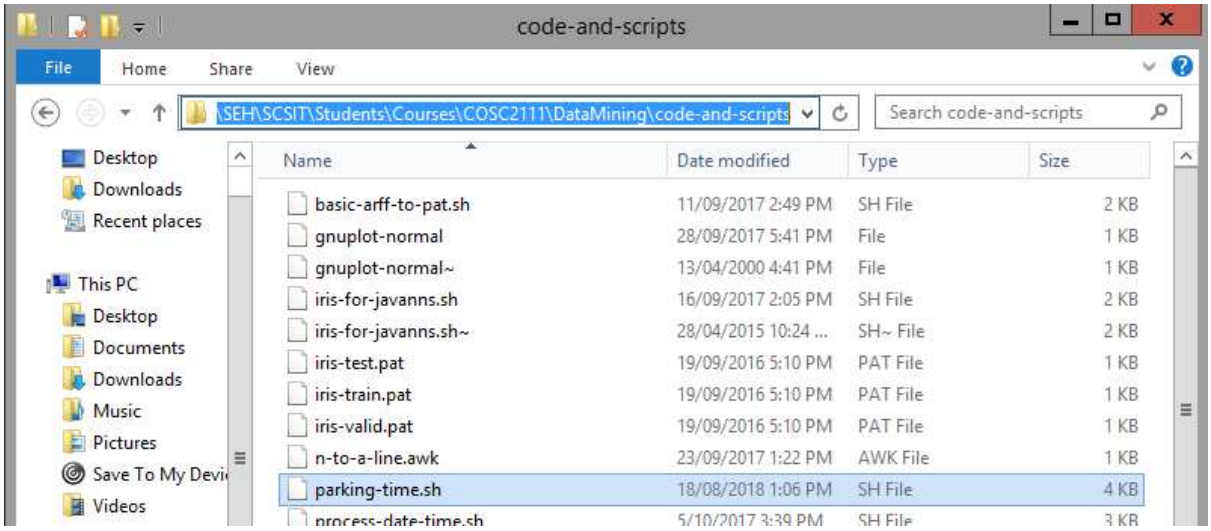
ls

cd HDrive

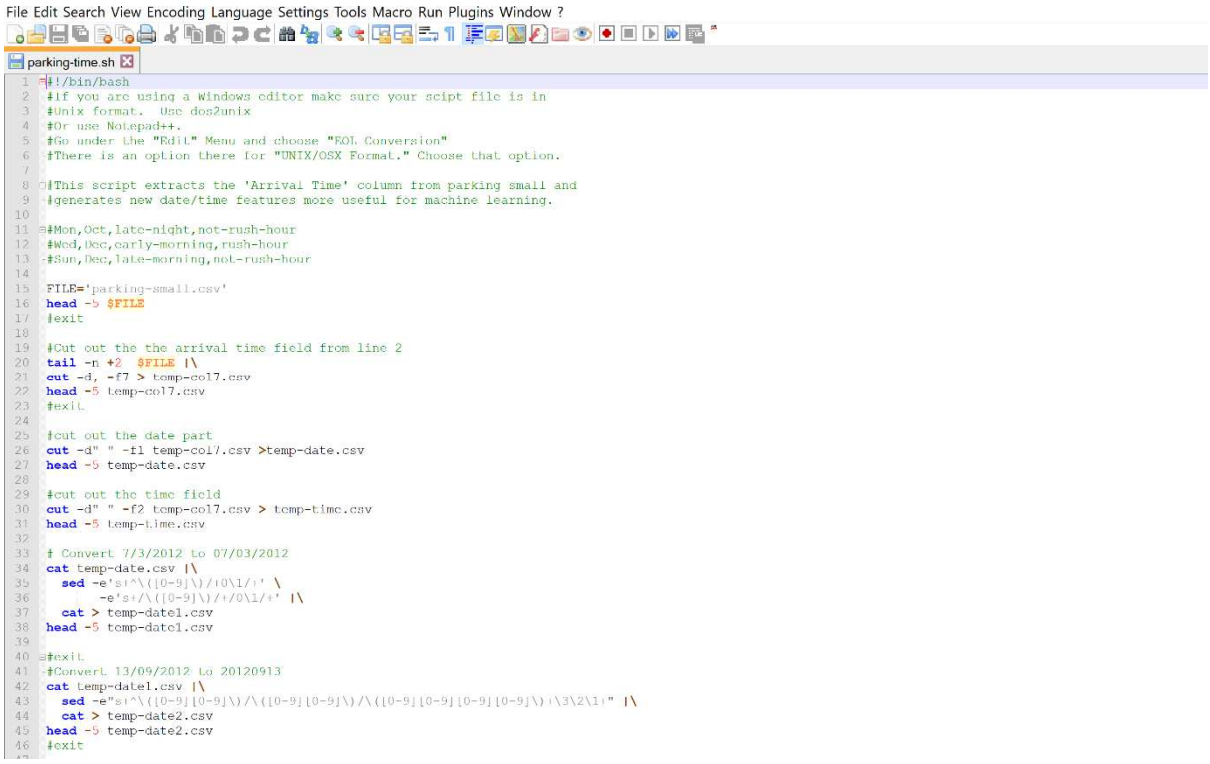
ls

cd DM

5. Open up parking-time.sh with an editor an inspect it. If you don't know any other editor, try nano.



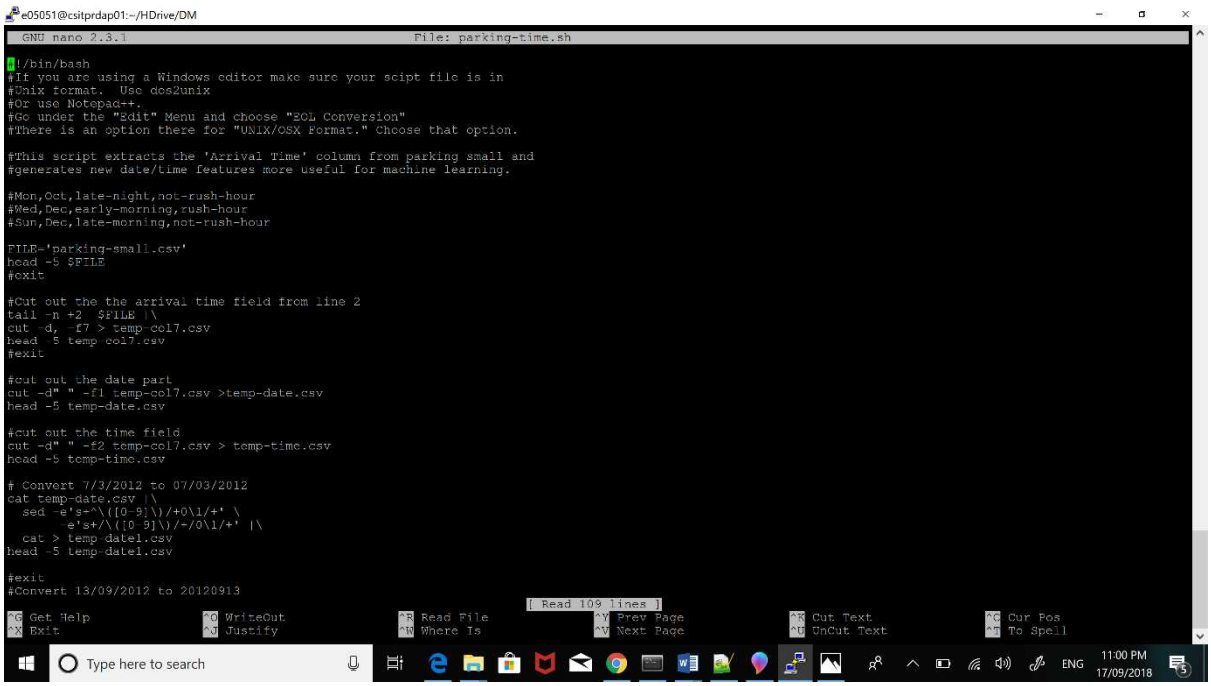
Open parking-time.sh using Notepad++ or any other editor you like.



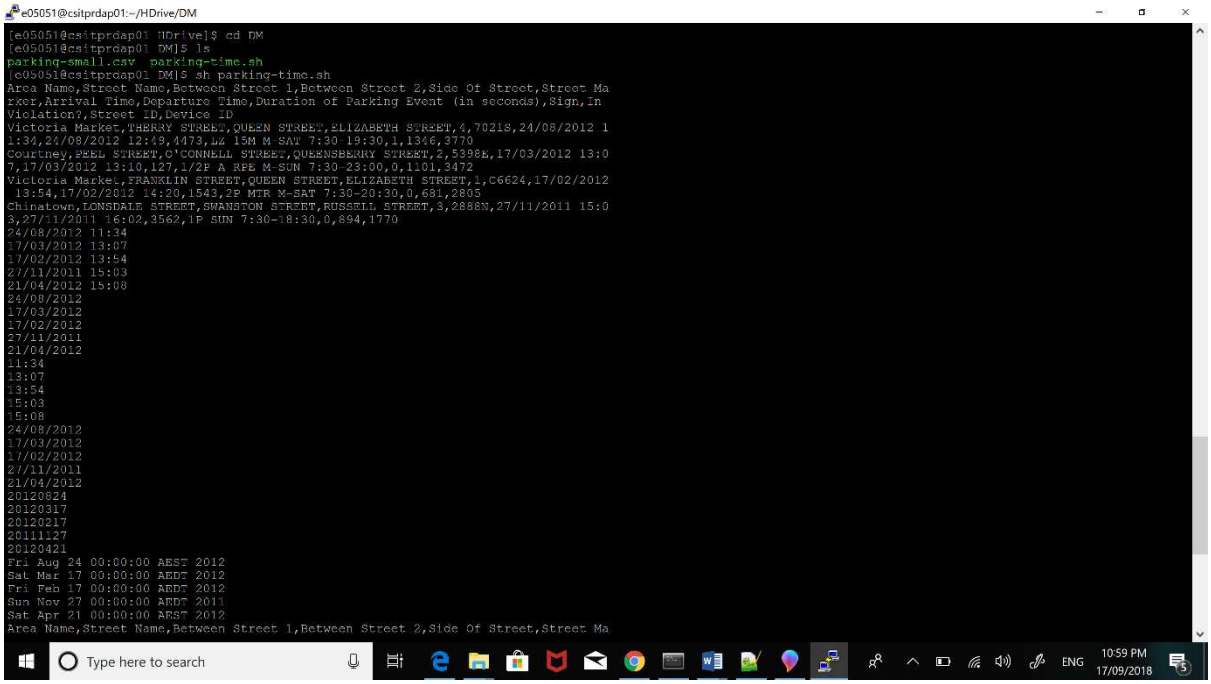
Or open through nano by typing the following command in the linux command shell:

nano parking-time.sh

Now, you can see what is inside parking-time.sh script as shown in the following figure.

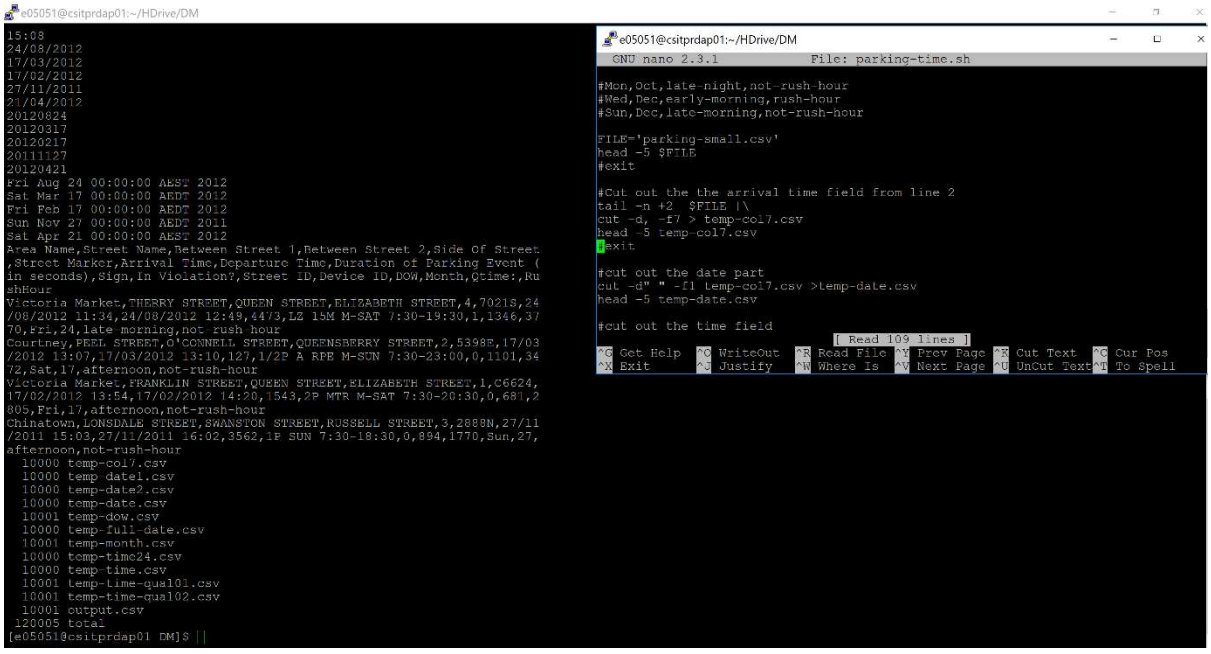


6. To run the script: sh parking-time.sh



7. To understand the script, we recommend using two windows, one for the editor and one for running the script. For each #exit

(a) Work out what the code immediately prior is attempting to do.



(b) Remove the # and run the script.

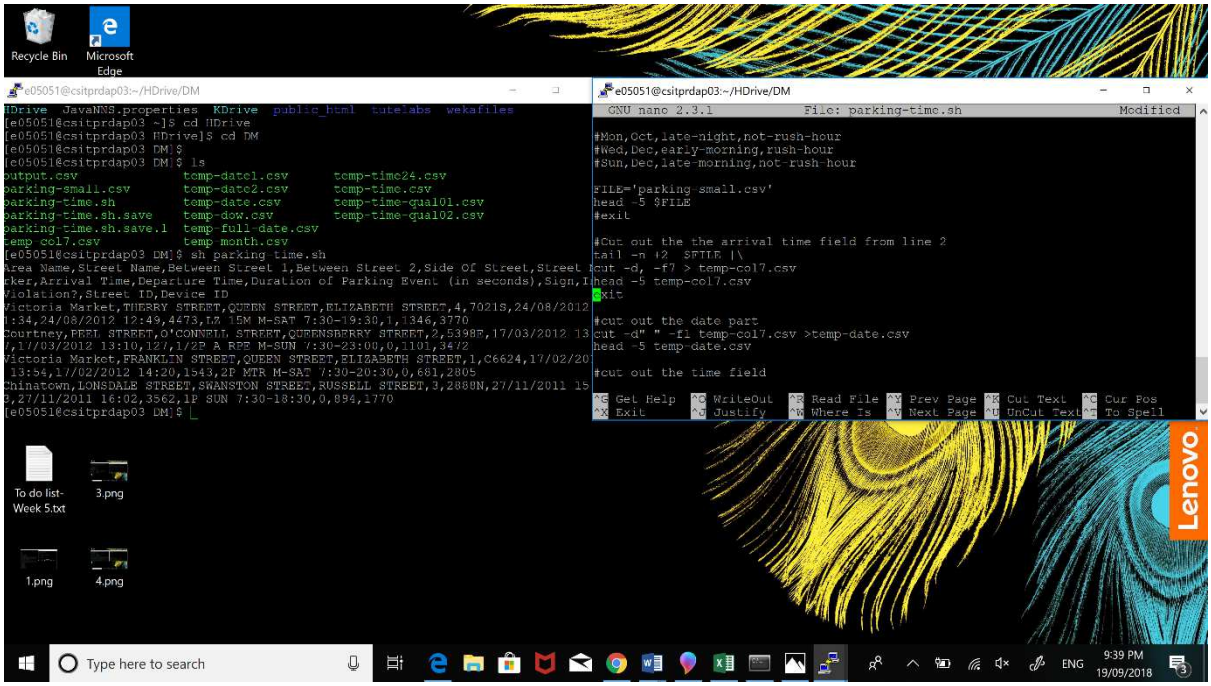
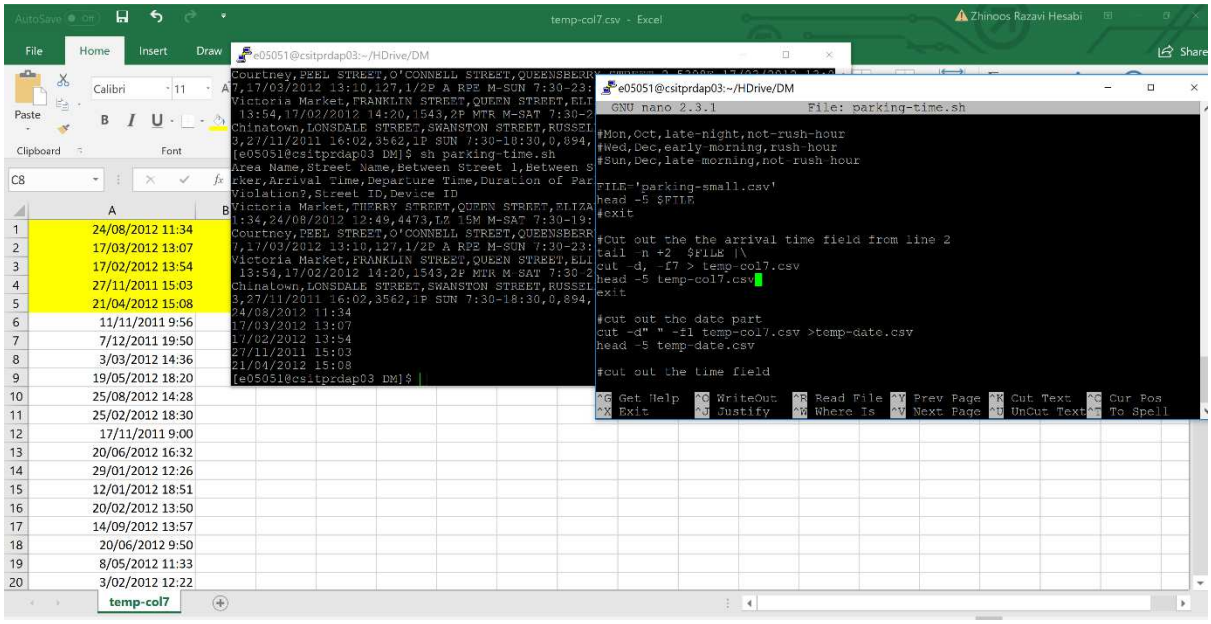


Figure . Removing # from the first exit and the output of running bash script after removing # in the left hand side.

(c) When it stops verify that the output and the temporary files written are what you expect.



As you can see from the above screenshot, the script exit after running the following set of commands written in the script:

#Cut out the the arrival time field from line 2

tail -n +2 $FILE |\

cut -d, -f7 > temp-col7.csv

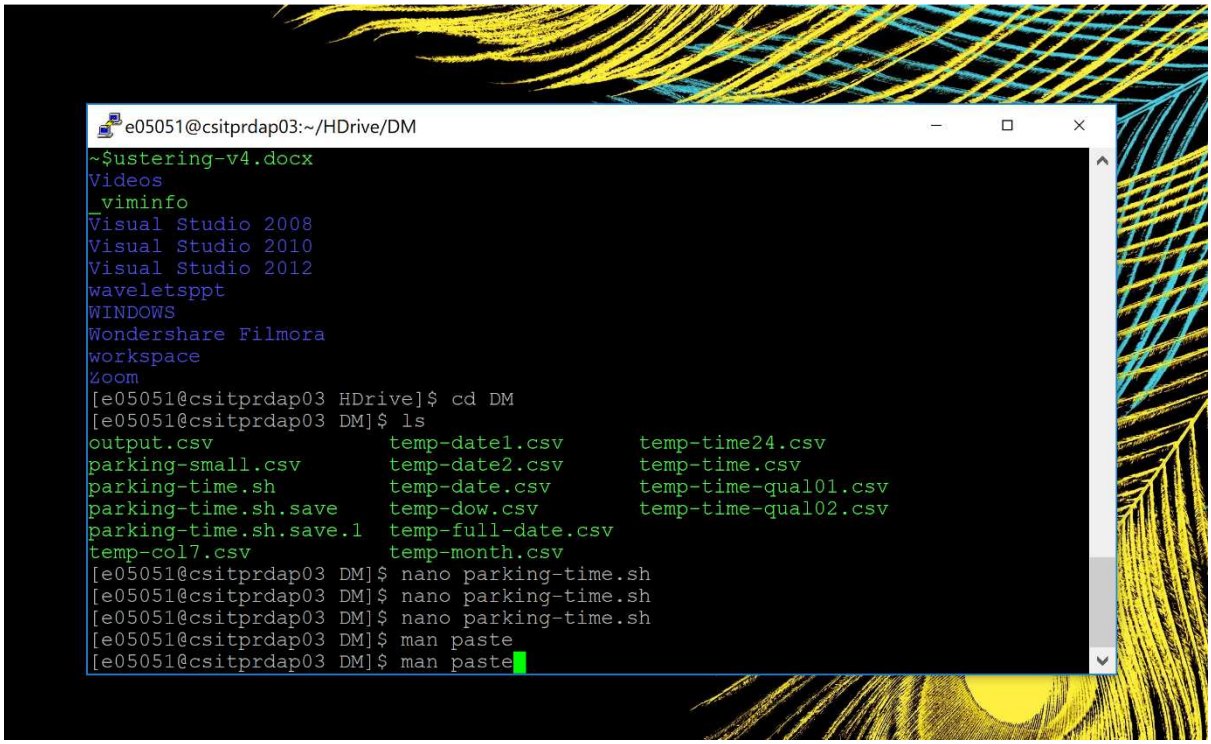
head -5 temp-col7.csv

exit

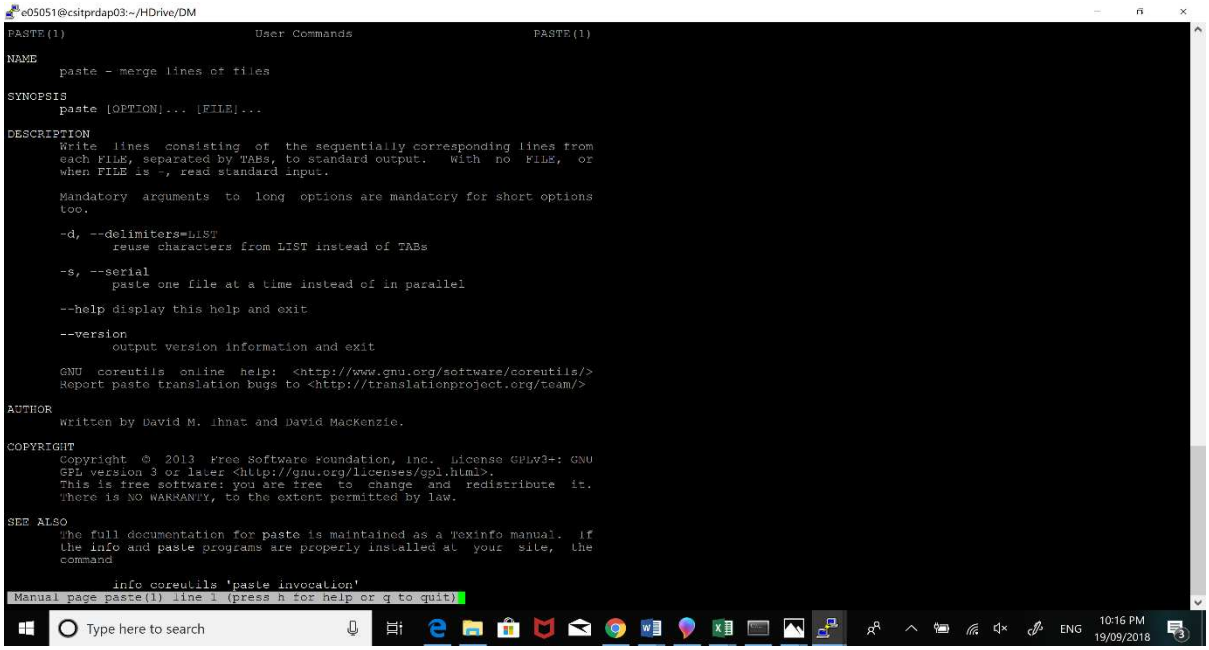
and write the results on temp-col7.csv. When you open the output file of temp-col7.csv, you can match the first 5 rows of csv file are the same as the output of the middle shell command in the above figure.

You can di the same for the rest of script to see what s happening within this script.

8. To get basic help on any program, use man, eg : man paste



after typing man paste, you need to press enter and you would get the following result:



9. Run the script, view the temporary files, look at where they are produced in the script and understand the that code that produces them.

10. Extend the script to generate a new column, “Weekday” in the output file where “yes” indicates a week day and “no” indicates a Saturday or Sunday.