

# Final Exam Group A

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## NOTICE:

Please rename filename to "Student ID\_finalA". For Example: 4109056026\_finalA  
Please remember to export to PDF before uploading it on iLearning.

## If you do the following, you will get 0:

1. Leave the class room before the end time
2. Use cell phone or any other devices
3. Open course slides, webpages, or previous homework
4. Take the exam paper
5. Cheating

## If you do the following, you will lose 10 points:

1. Upload your answer file to the wrong group in iLearning 3.0
2. Filename is not correct
3. Forget to convert docx to pdf

## WARNING:

Don't use semicolon (;) or && if the question requires only one-line command.  
Don't use the error message returned by the command as the answer to the question.

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1. Regular expressions (regex or re) are powerful tools for pattern matching in text processing and data retrieval, using special characters and symbols to define search patterns. Please explain the following commands which include regular expressions.

a)

```
ls -a | egrep -n '.*\..+'
```

ANS:

(You should type explanation)

b)

```
:s/.\\.\\...\\.../\\/g\\//g
```

(in the command mode of the vi editor)

ANS:

(You should type explanation)

c)

```
egrep "^[^AEae0-9]" info.log
```

ANS:

(You should type explanation)

2. Use **one-line command** to show the top 15 filenames and directory names that do not contain a dot (.) or a hyphen/dash (-) under the "/etc" folder, including all subdirectories at all levels. (If you find that there is permission denied problem, please use "sudo" + your command)

ANS:

(You should type command and screenshot the result)

3. Gzip (GNU zip) is a popular file compression utility in Unix and Unix-like operating systems. It is used to reduce the size of files for efficient storage and faster transmission over networks. Now, please tell me **two different ways** to uncompress the file named "secret.gz".

ANS:

(You should type command only)

4. I have created my own website where people can fill in their personal information to join my upcoming graduation party. Besides classmates and friends from the same year, you have also invited some juniors and even some students from different departments. It will be the last crazy night of eating, drinking, playing board games, and chatting until dawn before facing life as a graduate student at NTHU. The collected information is stored in a CSV file called "partySheet.csv", as shown below. It uses the comma (,) to separate every field, and the next line symbol to separate everyone's information. Please complete the following questions.

SHIH-YU,0912345678,edmondyang1104@icloud.com  
YUEN-LIN,0987654321,yuenlin0925@gmail.com

- a) I want to ensure how many people have written their phone numbers correctly according to the following rules :
1. The phone number starts with 09.
  2. Followed by 8 digits (0-9).
  3. The entire phone number must not contain any other symbols.
  4. You should consider that email may meet the above rules.
  5. You can consider that every field wouldn't contain the comma (,).

Use **one-line command** to show the number of correct phone number in "partySheet.csv".

ANS:

(You should type command only)

- b) I want to know who does not share my good taste in using iCloud as their email address. The rules for an iCloud email address are as follows:

1. The email address must end with "@icloud.com".

Use **one-line command** to show the number of people who doesn't use iCloud address in "partySheet.csv".

ANS:

(You should type command only)

- c) Use **one-line command** to show the contents of "partySheet.csv" sorted in reverse order from the 4<sup>th</sup> line. (= don't show top 3 lines)

ANS:

(You should type command only)

5. File sharing in Unix systems involves the distribution and access of files across different users and systems. It allows multiple users to collaborate and share resources efficiently. Now, complete the following questions.

- a) How to establish a hard link and a soft link to the file named "Letter of Invitation"?  
(You need to create a hard link named "letter.hard" and a soft link named "letter.soft".)

ANS:

(You should type command only)

- b) If I removed the file "Letter of Invitation", What happens with the hard link and the soft link?

ANS:

(You should type answer only)

- c) Use **one-line command** to show the number of soft link file in the folder "/usr/bin".

ANS:

(You should type command and screenshot the result)

6. Use **one-line command** to show the last 15 lines of all current terminal sessions and background processes (including those executed by root).

ANS:

(You should type command and screenshot the result)

7. Create the following content, and complete the below questions.(The field Separator is Tab, and the word separator is space in Kind.txt)

Kind.txt

SunScreen	Anessa
SunScreen	Elixir
Cosmetic	Pair
Snack	White_Almond_Chocolate
Snack	Pocky_Strawberry
Snack	Pocky_Matcha

Price.txt

Anessa	1680
Elixir	6100
Pair	1280
White_Almond_Chocolate	220
Pocky_Strawberry	180
Pocky_Matcha	195

Number.txt

Anessa	1
Elixir	1
Pair	1
White_Almond_Chocolate	3
Pocky_Strawberry	2
Pocky_Matcha	2

- a) Use **one-line command** to merge the files into the files named "JapanExcel.txt" LIKE the below image. Then, show the content of "JapnaExcel.txt".

Anessa	SunScreen	1680	1
Elixir	SunScreen	6100	1
Pair	Cosmetic	1280	1
White_Almond_Chocolate	Snack	220	3
Pocky_Strawberry	Snack	180	2
Pocky_Matcha	Snack	195	2

ANS:

(You should type command and screenshot the result)

- b) Use **one-line command** to show the number of types I bought from Japan (based on the first column of Kind.txt) **NOTICE: If types are duplicated, they can only be counted once.**

ANS:

(You should type command and screenshot the result)

- c) Use **one-line command** to sort the contents of "JapanExcel.txt" in descending order by price (which is the third column), and display the top three lines. (You can just consider using character to compare, not real number.)

ANS:

(You should type command and screenshot the result)