

Unix Final-term Exam (2022/06/13)

1. Please create Q1.txt under /home/<your student id> and the content is following: (**screenshot your answer**)

```
bookstore
execute
excel
oops
foodpanda
exe7
leverage
eyebrow
aesencrypt
eye6
google
oooh
zoo
bamboo
aooo
```

- (a) Please display the word “zoo”, “bamboo” and ”aooo” and following the command format: grep “x” **Q1.txt**, and please give **one** “x” as your answer (5%)

Ans:

- (b) Please display the word “google”, “foodpanda”, ”bookstore”, and “aooo” and following the command format: grep “x” **Q1.txt**, and please give **one** “x” as your answer (5%)

Ans:

- (c) Please show the word “oops” and “oooh” in **Q1.txt** and save the word as a new file named **adjective.txt** under /home/<your student id> **in one line command**. Finally, please use cat command to show the content of **adjective.txt** (5%)

Ans:

2. Please create two table called **phone_number** and **major_and_GPA**. (**screenshot your answer**)

The content of the “**phone_number**” file:

Jamie	Davis	515.001.1212
Hassaan	Kim	503.444.2132
John	Johnson	301.999.8888
David	Kendall	229.111.2013
Sandy	Kendall	555.123.9999

The content of the “**major_and_GPA**” file:

Jamie	Davis	EE	3.05
Hassaan	Kim	CS	2.38
John	Johnson	CE	3.54
David	Kendall	PSY	3.97
Sandy	Kendall	CS	3.61

(With a tab as delimiters)

- (a) Please use the **egrep** command to display the lines which do **not** contain words **starting with "Dav"** in the **phone_number**. (5%)

Ans:

- (b) Make a combined table in a new file called **student_info**, which has ordered fields in **first name, last name, major, GPA and phone number** by **cut** and **paste** commands in one line. Use **cat** command to show your results. (5%)

Ans:

3. Please create two files. One is named **ch8ex2** without content and the other is named **ch8ex1** with the content "unixch8" (**screenshot your answer**)
- (a) Create a hard link to **ch8ex1** called **ch8ex1.hard**. To verify that the link has been established, use the **ls -il** command to show your answer. (5%)
- Ans:**
- (b) Please create a hard link to **ch8ex1** named **ch8ex2**. Note that the **ch8ex2** already exists in your directory, you need to overwrite it. To verify that the link has been established, use the **ls -il** command to show your answer. (5%)
- Ans:**
- (c) Remove the hard link **ch8ex2**. (5%)
- Ans:**
4. If now the User1 has **execute permission** for User2's home directory and **execute permissions** for **d1** folder. Is it possible to create a hard link as the following command line? Why? (**answer by word.**)
\$ ln -f /home/User1/ex1/f1 /home/User2/d1 (6%)
- Ans:**
5. If you want to determine the total number of processes, including all system processes and daemons on your UNIX system, what commands can you use? (**answer by word.**) (5%)
- Ans:**
6. Please run the command to display all the processes information that running on your system. The information content **only needs** to include the parent's process ID, process ID, status, time and command. (**Answer the question with the screenshot**) (6%)
- Ans:**
7. Please modify the environment options according to the following contents:

```
kay@kay-VirtualBox:~$ cat > .exrc
:ab Ilove UNIX
:ab ab q!
:ab abb q!
:ab wq i
:ab w a
:ab q a
^C
```

Please list all abbreviations in vi editor. (**screenshot your answer**) (5%)

Ans:

8. Create a “test” file with the following content: (**screenshot your answer**) (6%)

```
kay@kay-VirtualBox:~$ cat > test
a\1089
b\1129
c\2405
d\919
e\817
^C
```

- You can only use the “**sort**” command and do it in one line.
- Your result must be the same as below.

```
e\817
d\919
a\1089
b\1129
c\2405
```

Ans:

9. Read the descriptions and finish the following questions. (**screenshot your answer**)

- (a) Please use **cat > file2022** and then use command to encrypt **file2022**. (5%)

Ans:

- (b) Following (a), please use one command to decrypt file. (5%)

Ans:

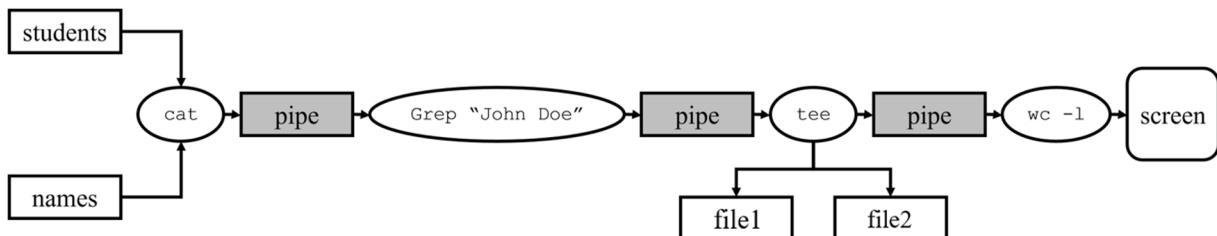
10. Write a command that counts the number of characters, words, and lines in a file called **fire** in your present working directory and writes these values into a file **fire.size**. If the command fails, the error message should go to a file **error.log**. Use I/O and error redirections. (**screenshot your answer**)

(You also need to use **ls** command to show your results includes **error.log**, **fire**, **fire.size**) (6%)

Ans:

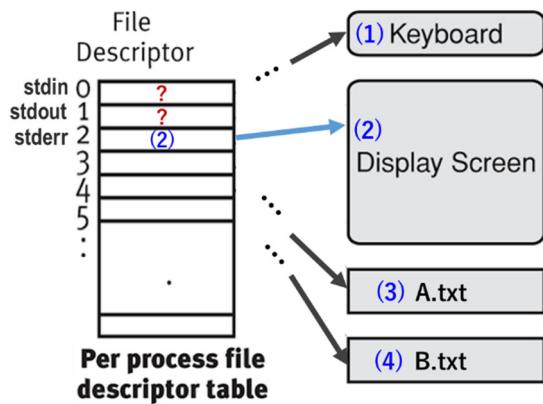
11. Please write a command according to the following image. You need to use piping and I/O redirection.

(**No screenshots needed**) (6%)



Ans:

12. See the graph below. Typically, the file descriptor for stdin links to Keyboard while the file descriptors for stdout and stderr both link to Display Screen. In some cases, the program can take input from a file instead of Keyboard, and the output result can be saved into another file, not necessarily need to be displayed on Screen.



Consider the following situation of executing the specified commands, and try to answer what the corresponding **stdin** and **stdout** are. (**fill in the number**)

(a) cat > A.txt (5%)

Ans: stdin is (). stdout is ().

(b) cat A.txt > B.txt (5%)

Ans: stdin is (). stdout is ().

13. Please write down your experience on this class. (More than 10 words) (10%)

Ans: