

# Lab1 for Advanced Big Data Analytics

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## 1 Easy part

0. `uname -s -v`

-s shows the name of operate system

-v shows the version of operate system

1. `echo $HOME`

\$HOME means my home directory

2. `whoami`

3. `chmod a+x 1.sh`

a means all users

+x means adding authority of executing

4. `du --max-depth=1 -h`

--max-depth= directories that exceed a specified number of levels are ignored

-h means human-readable

5. `mv 1.sh 2.sh`

6. `apt-get install jq`

7. `ssh oye1@10.19.248.12`

8. `vi 1.sh`

## 2 Normal part

1. `cat /etc/hosts | head -n 10 | tail -n 5`

head -n 10 shows 1-10 lines of this file

use pipe and tail -n 5 shows 6-10 of the file

2. `cp -p 1.sh ~`

-p preserves the modification time  
~ means my home directory

3. *chmod -R 777 /dir*  
-R means recursively read files and subdirectories  
777 means rwxrwxrwx(readable, writable, executable to all users)

4. *grep -C 1 'url' commits.json*  
-C 1 means printing 1 line before and 1 line after the matching row

### 3 Hard part

1. *ls -A | grep '\.'*  
ls -A shows all files exclude . and ..  
\. matches all the hidden files

2. *echo {a..d}{a..d}*  
{a..d} means all letters in a-d

3. *ls -l | awk '{print \$1,\$2}' | grep -v "total"*  
awk 'print \$1,\$2' shows the first and the second column  
grep -v "total" excludes the header

4. *cat input.txt | tr [:upper:] [:lower:] >> output.txt*  
tr [:upper:] [:lower:] transforms all uppercase letters to lowercase  
>> outputs the result

5. *du -a | sort -n -r | head -n 3*  
sort -n -r means the reverse order by space-consuming

h6 - h9 are shown by pictures.  
I will explain some point line.  
use location parameters in Linux \$1.  
use 'pwd' to show current directory.  
use [ ! -d \$1 ]/"\$file ] to distinguish between files and subdirectories.

```
#!/bin/bash
declare -i sum=0
for i in {1..100}
do
    let sum=$sum+$i
done
echo $sum
```

(a) 1

```
junjin@ubuntu:~$ sh h6.sh
5050
```

(b) 2

Figure 1: h6

```
#!/bin/bash
declare -i lines=0
for file in `ls $1`
do
    if [ ! -d $1/"$file" ]
    then
        echo `wc -l $1/"$file"`
    else
        let lines=0
    fi
done
```

(a) 1

```
junjin@ubuntu:~$ sh h7.sh pod
25 /home/junjin/1
26 /home/junjin/1.txt
27 /home/junjin/2
28 /home/junjin/2.sh
29 /home/junjin/4801369880.jpg
30 /home/junjin/anaconda3-3.2.0-Linux-x86_64.sh
31 /home/junjin/attention.mpv
32 /home/junjin/attent_model.py
33 /home/junjin/a.txt
34 /home/junjin/bfs-flickr30k.json
35 /home/junjin/examples.desktop
36 /home/junjin/h6.sh
37 /home/junjin/h6.sh
38 /home/junjin/h6.sh
39 /home/junjin/ls.txt
40 /home/junjin/lbcq10.ho.3.25
41 /home/junjin/lbcq10.ho.3.25
42 /home/junjin/lbcqvar001
43 /home/junjin/model.py
44 /home/junjin/output.txt
45 /home/junjin/readme.md
46 /home/junjin/README.txt
```

(b) 2

Figure 2: h7

```
#!/bin/bash
declare extend=".New"
for file in `ls $1`
do
    if [ ! -d $1/"$file" ]
    then
        mv $1/"$file" "$1/"$file$extend
    else
        echo "$file" is not a file
    fi
done
```

(a) 1

```
junjin@ubuntu:~$ ls /home/junjin/new
1.txt.New
junjin@ubuntu:~$ sh h8.sh /home/junjin/new
news is not a file
junjin@ubuntu:~$ ls /home/junjin/new
1.txt.New.New
```

(b) 2

Figure 3: h8

```
#!/bin/bash
echo "The current date"
echo `date +%Y-%m-%d`
echo "The current time"
echo `date +%H:%m:%s`
echo "The current user"
echo `whoami`
echo "The current work directory"
echo `pwd`
```

(a) 1

```
junjin@ubuntu:~$ sh h9.sh
The current date
2019-03-15
The current time
09:03:1552000275
The current user
junjin
The current work directory
/home/junjin
```

(b) 2

Figure 4: h9