

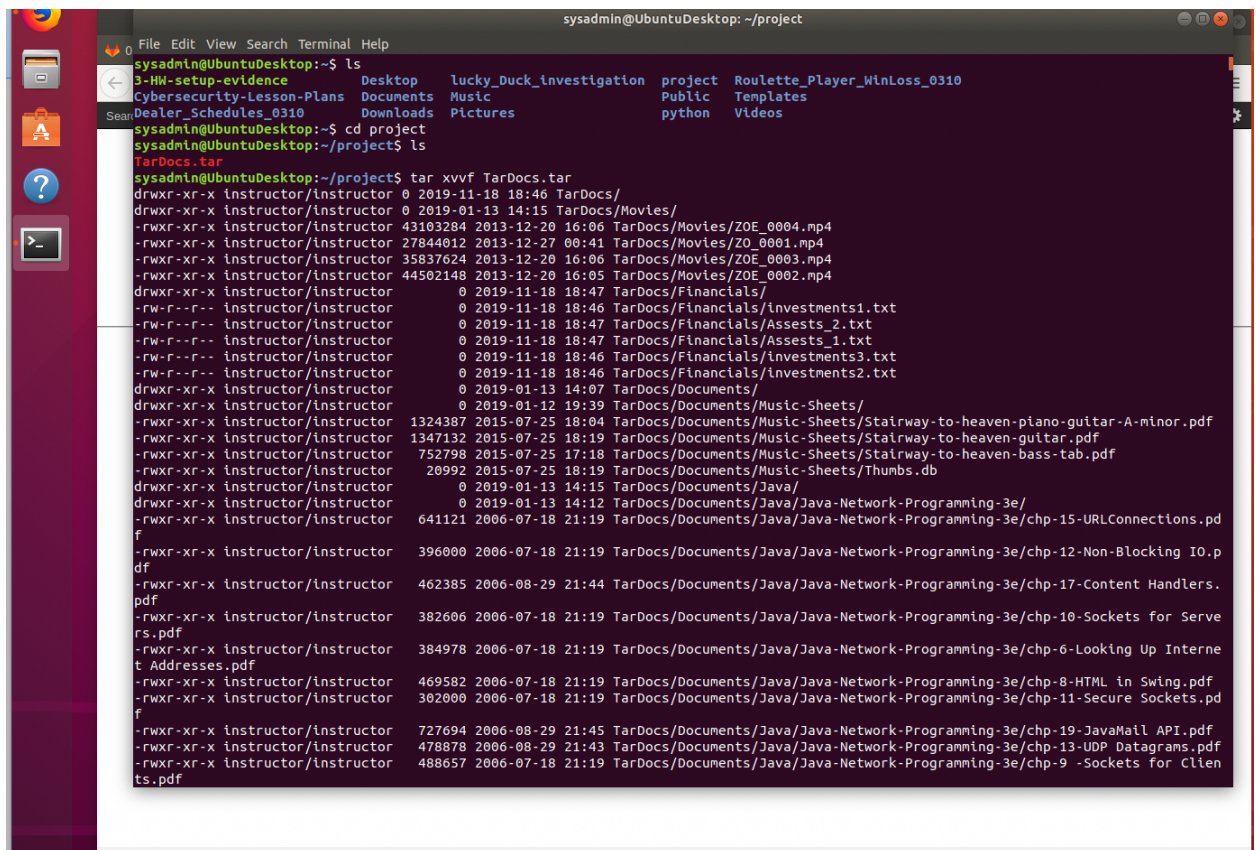
Week 5 Project Submission File: Archiving and Logging Data

Please edit this file by adding the solution commands on the line below the prompt.

Save and submit the completed file for your homework submission.

Step 1: Create, Extract, Compress, and Manage tar Backup Archives

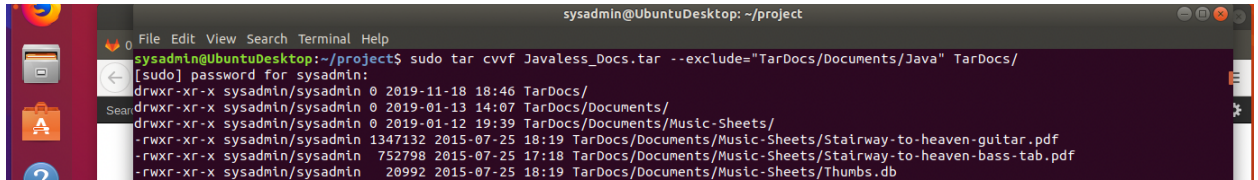
1. Command to **extract** the TarDocs.tar archive to the current directory:



The screenshot shows a terminal window titled 'sysadmin@UbuntuDesktop: ~/project'. The user has navigated to the 'project' directory and listed its contents, showing 'TarDocs.tar'. They then executed the command 'tar xvf TarDocs.tar', which has successfully extracted the archive. The output lists the permissions, owner, group, size, date, time, and file path for each item extracted. The files include directories like 'TarDocs/Movies/' and 'TarDocs/Financials/', and various files such as 'ZOE_0004.mp4', 'ZOE_0001.mp4', 'ZOE_0003.mp4', 'ZOE_0002.mp4', 'Investments1.txt', 'Assests_2.txt', 'Assests_1.txt', 'Investments3.txt', 'Investments2.txt', 'Music-Sheets/Stairway-to-heaven-piano-guitar-A-minor.pdf', 'Stairway-to-heaven-guitar.pdf', 'Stairway-to-heaven-bass-tab.pdf', 'Thumbs.db', 'Java/Java-Network-Programming-3e/', 'Java-Network-Programming-3e/chp-15-URLConnections.pdf', 'Java-Network-Programming-3e/chp-12-Non-Blocking IO.pdf', 'Java-Network-Programming-3e/chp-17-Content Handlers.pdf', 'Java-Network-Programming-3e/chp-10-Sockets for Servers.pdf', 'Java-Network-Programming-3e/chp-6-Looking Up Internet Addresses.pdf', 'Java-Network-Programming-3e/chp-8-HTML in Swing.pdf', 'Java-Network-Programming-3e/chp-11-Secure Sockets.pdf', 'Java-Network-Programming-3e/chp-19-JavaMail API.pdf', 'Java-Network-Programming-3e/chp-13-UDP Datagrams.pdf', and 'Java-Network-Programming-3e/chp-9-Sockets for Clients.pdf'.

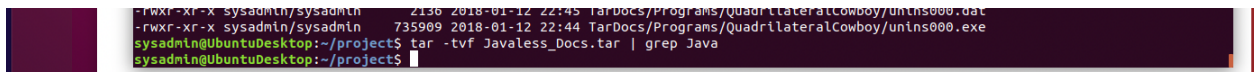
```
sysadmin@UbuntuDesktop: ~/project
sysadmin@UbuntuDesktop:~$ ls
3-MW-setup-evidence Desktop lucky_Duck_investigation project Roulette_Player_WinLoss_0310
Cybersecurity-Lesson-Plans Documents Music Public Templates
Dealer_Schedules_0310 Downloads Pictures python Videos
sysadmin@UbuntuDesktop:~$ cd project
sysadmin@UbuntuDesktop:~/project$ ls
TarDocs.tar
sysadmin@UbuntuDesktop:~/project$ tar xvf TarDocs.tar
drwxr-xr-x instructor/instructor 0 2019-11-18 18:46 TarDocs/
drwxr-xr-x instructor/instructor 0 2019-01-13 14:15 TarDocs/Movies/
-rwxr-xr-x instructor/instructor 43103284 2013-12-20 16:06 TarDocs/Movies/ZOE_0004.mp4
-rwxr-xr-x instructor/instructor 27844012 2013-12-27 00:41 TarDocs/Movies/ZOE_0001.mp4
-rwxr-xr-x instructor/instructor 35837624 2013-12-20 16:06 TarDocs/Movies/ZOE_0003.mp4
-rwxr-xr-x instructor/instructor 44502148 2013-12-20 16:05 TarDocs/Movies/ZOE_0002.mp4
drwxr-xr-x instructor/instructor 0 2019-11-18 18:47 TarDocs/Financials/
-rw-r--r-- instructor/instructor 0 2019-11-18 18:46 TarDocs/Financials/Investments1.txt
-rw-r--r-- instructor/instructor 0 2019-11-18 18:47 TarDocs/Financials/Assests_2.txt
-rw-r--r-- instructor/instructor 0 2019-11-18 18:47 TarDocs/Financials/Assests_1.txt
-rw-r--r-- instructor/instructor 0 2019-11-18 18:46 TarDocs/Financials/Investments3.txt
-rw-r--r-- instructor/instructor 0 2019-11-18 18:46 TarDocs/Financials/Investments2.txt
drwxr-xr-x instructor/instructor 0 2019-01-13 14:07 TarDocs/Documents/
drwxr-xr-x instructor/instructor 0 2019-01-12 19:39 TarDocs/Documents/Music-Sheets/
-rwxr-xr-x instructor/instructor 1324387 2015-07-25 18:04 TarDocs/Documents/Music-Sheets/Stairway-to-heaven-piano-guitar-A-minor.pdf
-rwxr-xr-x instructor/instructor 1347132 2015-07-25 18:19 TarDocs/Documents/Music-Sheets/Stairway-to-heaven-guitar.pdf
-rwxr-xr-x instructor/instructor 752798 2015-07-25 17:18 TarDocs/Documents/Music-Sheets/Stairway-to-heaven-bass-tab.pdf
-rwxr-xr-x instructor/instructor 20992 2015-07-25 18:19 TarDocs/Documents/Music-Sheets/Thumbs.db
drwxr-xr-x instructor/instructor 0 2019-01-13 14:15 TarDocs/Documents/Java/
drwxr-xr-x instructor/instructor 0 2019-01-13 14:12 TarDocs/Documents/Java/Java-Network-Programming-3e/
-rwxr-xr-x instructor/instructor 641121 2006-07-18 21:19 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-15-URLConnections.pdf
-rwxr-xr-x instructor/instructor 396000 2006-07-18 21:19 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-12-Non-Blocking IO.pdf
-rwxr-xr-x instructor/instructor 462385 2006-08-29 21:44 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-17-Content Handlers.pdf
-rwxr-xr-x instructor/instructor 382606 2006-07-18 21:19 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-10-Sockets for Servers.pdf
-rwxr-xr-x instructor/instructor 384978 2006-07-18 21:19 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-6-Looking Up Internet Addresses.pdf
-rwxr-xr-x instructor/instructor 469582 2006-07-18 21:19 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-8-HTML in Swing.pdf
-rwxr-xr-x instructor/instructor 302000 2006-07-18 21:19 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-11-Secure Sockets.pdf
-rwxr-xr-x instructor/instructor 727694 2006-08-29 21:45 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-19-JavaMail API.pdf
-rwxr-xr-x instructor/instructor 478878 2006-08-29 21:43 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-13-UDP Datagrams.pdf
-rwxr-xr-x instructor/instructor 488657 2006-07-18 21:19 TarDocs/Documents/Java/Java-Network-Programming-3e/chp-9-Sockets for Clients.pdf
```

2. Command to **create** the Javaless_Doc.tar archive from the TarDocs/ directory, while excluding the TarDocs/Documents/Java directory:



```
sysadmin@UbuntuDesktop: ~/project
File Edit View Search Terminal Help
sysadmin@UbuntuDesktop:~/project$ sudo tar cvvf Javaless_Docs.tar --exclude="TarDocs/Documents/Java" TarDocs/
[sudo] password for sysadmin:
drwxr-xr-x sysadmin/sysadmin 0 2019-11-18 18:46 TarDocs/
drwxr-xr-x sysadmin/sysadmin 0 2019-01-13 14:07 TarDocs/Documents/
drwxr-xr-x sysadmin/sysadmin 0 2019-01-12 19:39 TarDocs/Documents/Music-Sheets/
-rwxr-xr-x sysadmin/sysadmin 1347132 2015-07-25 18:19 TarDocs/Documents/Music-Sheets/Stairway-to-heaven-guitar.pdf
-rwxr-xr-x sysadmin/sysadmin 752798 2015-07-25 17:18 TarDocs/Documents/Music-Sheets/Stairway-to-heaven-bass-tab.pdf
-rwxr-xr-x sysadmin/sysadmin 20992 2015-07-25 18:19 TarDocs/Documents/Music-Sheets/Thumbs.db
```

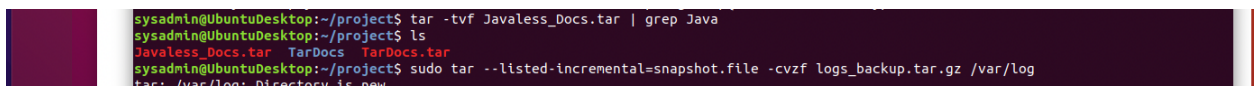
3. Command to ensure Java/ is not in the new Javaless_Docs.tar archive:



```
sysadmin@UbuntuDesktop:~/project$ tar -tvf Javaless_Docs.tar | grep Java
-rwxr-xr-x sysadmin/sysadmin 2136 2018-01-12 22:45 TarDocs/Programs/QuadrilateralCowboy/unins000.dat
-rwxr-xr-x sysadmin/sysadmin 735909 2018-01-12 22:44 TarDocs/Programs/QuadrilateralCowboy/unins000.exe
sysadmin@UbuntuDesktop:~/project$
```

Bonus

- Command to create an incremental archive called logs_backup.tar.gz with only changed files to snapshot.file for the /var/log directory:



```
sysadmin@UbuntuDesktop:~/project$ tar -tvf Javaless_Docs.tar | grep Java
sysadmin@UbuntuDesktop:~/project$ ls
Javaless_Docs.tar TarDocs TarDocs.tar
sysadmin@UbuntuDesktop:~/project$ sudo tar --listed-incremental=snapshot.file -cvzf logs_backup.tar.gz /var/log
tar: /var/log: Directory is new
```

Critical Analysis Question

- Why wouldn't you use the options -x and -c at the same time with tar?

Creating and extracting a file at the same time is impossible. First, you need -c to create a back file first and then use -x to extract the files.

Step 2: Create, Manage, and Automate Cron Jobs

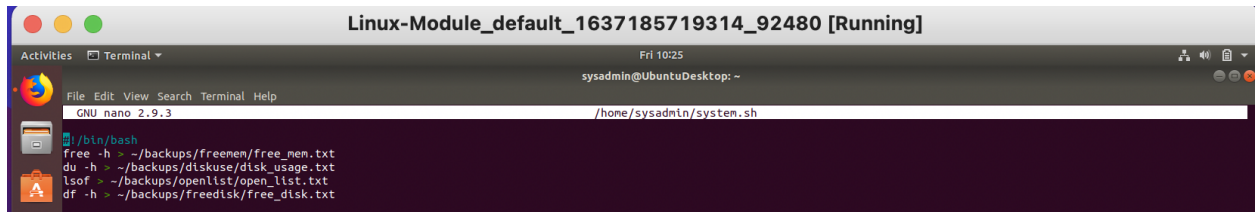
1. Cron job for backing up the /var/log/auth.log file:

Step 3: Write Basic Bash Scripts

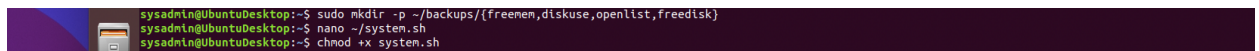
1. Brace expansion command to create the four subdirectories:

Paste your system.sh script edits below:

```
#!/bin/bash
```



2. [Your solution script contents here]
3. Command to make the system.sh script executable:



Optional

- Commands to test the script and confirm its execution:

Bonus

- Command to copy system to system-wide cron directory:



Step 4. Manage Log File Sizes

1. Run `sudo nano /etc/logrotate.conf` to edit the logrotate configuration file.

Configure a log rotation scheme that backs up authentication messages to the `/var/log/auth.log`.

- Add your config file edits below:
2. [Your logrotate scheme edits here]

Linux-Module_default_1637185719314_92480 [Running]

Activities Terminal ▾ Fri 10:31
sysadmin@UbuntuDesktop: ~

GNU nano 2.9.3 /etc/logrotate.conf Modified

```
# see "man logrotate" for details
# rotate log files weekly
weekly

# use the syslog group by default, since this is the owning group
# of /var/log/syslog.
su root syslog

# keep 4 weeks worth of backlogs
rotate 4

# create new (empty) log files after rotating old ones
create

# uncomment this if you want your log files compressed
#compress

# packages drop log rotation information into this directory
include /etc/logrotate.d

# no packages own wtmp, or btmp -- we'll rotate them here
/var/log/wtmp {
    missingok
    monthly
    create 0664 root utmp
    rotate 1
}

/var/log/btmp {
    missingok
    monthly
    create 0660 root utmp
    rotate 1
}

/var/log/auth.log {
    weekly
    rotate 7
    notifempty
    delaycompression
    missingok
}

# system-specific logs may be configured here
```

Get Help Exit Write Out Read File Where Is Replace Cut Text Uncut Text Justify To Spell Cur Pos Go To Line Undo Redo Mark Text Copy Text To Bracket WhereIs Next Previous Next Left ⌘