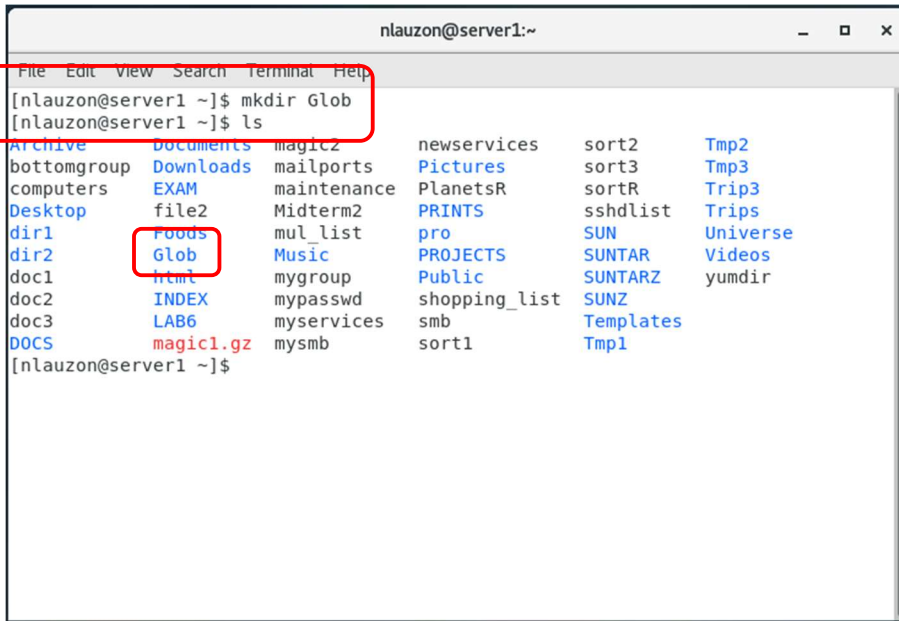# Archive and compression 2
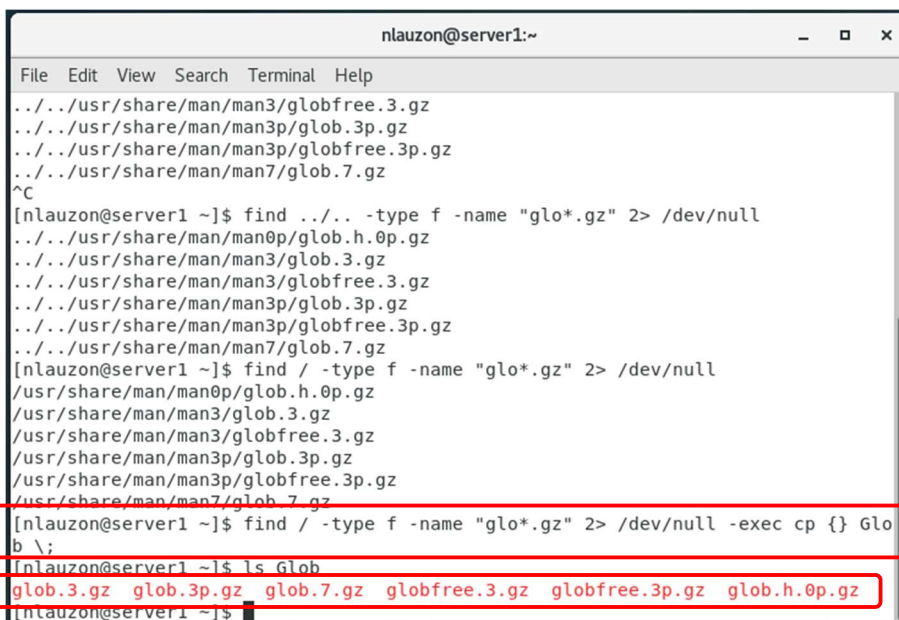# Nicolas Lauzon

1. **On your home directory, create a new directory named Glob**

```
                                  nlauzon@server1:~                    _  □  ×

File  Edit  View  Search  Terminal  Help
[nlauzon@server1 ~]$ mkdir Glob
[nlauzon@server1 ~]$ ls
Archive       Documents    magic2       newservices    sort2      Tmp2
bottomgroup   Downloads    mailports    Pictures       sort3      Tmp3
computers     EXAM         maintenance  PlanetsR       sortR      Trip3
Desktop       file2        Midterm2     PRINTS         sshdlist   Trips
dir1          Foods        mul_list     pro            SUN        Universe
dir2          Glob         Music        PROJECTS       SUNTAR     Videos
doc1          html         mygroup      Public         SUNTARZ    yumdir
doc2          INDEX        mypasswd     shopping_list  SUNZ
doc3          LAB6         myservices   smb            Templates
DOCS          magic1.gz    mysmb        sort1          Tmp1
[nlauzon@server1 ~]$
```

2. **Find all the files starting with "glob" and ending in ".gz" under the root (/) directory then copy them to your directory Glob (to suppress the permission denied messages, redirect standard error to /dev/null)**

```
                                  nlauzon@server1:~                    _  □  ×

File  Edit  View  Search  Terminal  Help
../../usr/share/man/man3/globfree.3.gz
../../usr/share/man/man3p/glob.3p.gz
../../usr/share/man/man3p/globfree.3p.gz
../../usr/share/man/man7/glob.7.gz
^C
[nlauzon@server1 ~]$ find ../.. -type f -name "glo*.gz" 2> /dev/null
../../usr/share/man/man0p/glob.h.0p.gz
../../usr/share/man/man3/glob.3.gz
../../usr/share/man/man3/globfree.3.gz
../../usr/share/man/man3p/glob.3p.gz
../../usr/share/man/man3p/globfree.3p.gz
../../usr/share/man/man7/glob.7.gz
[nlauzon@server1 ~]$ find / -type f -name "glo*.gz" 2> /dev/null
/usr/share/man/man0p/glob.h.0p.gz
/usr/share/man/man3/glob.3.gz
/usr/share/man/man3/globfree.3.gz
/usr/share/man/man3p/glob.3p.gz
/usr/share/man/man3p/globfree.3p.gz
/usr/share/man/man7/glob.7.gz
[nlauzon@server1 ~]$ find / -type f -name "glo*.gz" 2> /dev/null -exec cp {} Glo
b \;
[nlauzon@server1 ~]$ ls Glob
glob.3.gz  glob.3p.gz  glob.7.gz  globfree.3.gz  globfree.3p.gz  glob.h.0p.gz
[nlauzon@server1 ~]$
```

Nicolas Lauzon

3. Decompress all the files of the directory Glob

```
                              nlauzon@server1:~/Glob            _   ▫   ×

 File  Edit  View  Search  Terminal  Help
../../usr/share/man/man3p/globfree.3p.gz
../../usr/share/man/man7/glob.7.gz
[nlauzon@server1 ~]$ find / -type f -name "glo*.gz" 2> /dev/null
/usr/share/man/man0p/glob.h.0p.gz
/usr/share/man/man3/glob.3.gz
/usr/share/man/man3/globfree.3.gz
/usr/share/man/man3p/glob.3p.gz
/usr/share/man/man3p/globfree.3p.gz
/usr/share/man/man7/glob.7.gz
[nlauzon@server1 ~]$ find / -type f -name "glo*.gz" 2> /dev/null -exec cp {} Glo
b \;
[nlauzon@server1 ~]$ ls Glob
glob.3.gz  glob.3p.gz  glob.7.gz  globfree.3.gz  globfree.3p.gz  glob.h.0p.gz
[nlauzon@server1 ~]$ cd Glob
[nlauzon@server1 Glob]$ gunzip glo*
[nlauzon@server1 Glob]$ ls -lh
total 44K
-rw-r--r--. 1 nlauzon nlauzon 8.5K Mar  7 03:28 glob.3
-rw-r--r--. 1 nlauzon nlauzon  12K Mar  7 03:28 glob.3p
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 03:28 glob.7
-rw-r--r--. 1 nlauzon nlauzon   16 Mar  7 03:28 globfree.3
-rw-r--r--. 1 nlauzon nlauzon   18 Mar  7 03:28 globfree.3p
-rw-r--r--. 1 nlauzon nlauzon 3.0K Mar  7 03:28 glob.h.0p
[nlauzon@server1 Glob]$
```

4. Archive all the files located in the directory Glob to a file named glob.tar

```
                              nlauzon@server1:~/Glob            _   ▫   ×

 File  Edit  View  Search  Terminal  Help
[nlauzon@server1 ~]$ find / -type f -name "glo*.gz" 2> /dev/null -exec cp {} Glo
b \;
[nlauzon@server1 ~]$ ls Glob
glob.3.gz  glob.3p.gz  glob.7.gz  globfree.3.gz  globfree.3p.gz  glob.h.0p.gz
[nlauzon@server1 ~]$ cd Glob
[nlauzon@server1 Glob]$ gunzip glo*
[nlauzon@server1 Glob]$ ls -lh
total 44K
-rw-r--r--. 1 nlauzon nlauzon 8.5K Mar  7 03:28 glob.3
-rw-r--r--. 1 nlauzon nlauzon  12K Mar  7 03:28 glob.3p
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 03:28 glob.7
-rw-r--r--. 1 nlauzon nlauzon   16 Mar  7 03:28 globfree.3
-rw-r--r--. 1 nlauzon nlauzon   18 Mar  7 03:28 globfree.3p
-rw-r--r--. 1 nlauzon nlauzon 3.0K Mar  7 03:28 glob.h.0p
[nlauzon@server1 Glob]$ tar -cvf glob.tar glob*
glob.3
glob.3p
glob.7
globfree.3
globfree.3p
glob.h.0p
[nlauzon@server1 Glob]$ ls
glob.3  glob.3p  glob.7  globfree.3  globfree.3p  glob.h.0p  glob.tar
[nlauzon@server1 Glob]$
```

5. Archive and compress all the files located in the directory Glob to a file named glob.tar.gz

Before I did that, I first moved the archive file glob.tar built in the previous question to my username home, to ensure it would not be included in the compressed archive file built here.

```
nlauzon@server1:~/Glob                                      _  □  ×

File  Edit  View  Search  Terminal  Help
[nlauzon@server1 Glob]$ mv glob.tar ~
[nlauzon@server1 Glob]$ ls
glob.3  glob.3p  glob.7  globfree.3  globfree.3p  glob.h.0p
[nlauzon@server1 Glob]$ tar -cvzf glob.tar.gz glob*
glob.3
glob.3p
glob.7
globfree.3
globfree.3p
glob.h.0p
[nlauzon@server1 Glob]$ mv ~glob.tar ~/Glob
mv: cannot stat '~glob.tar': No such file or directory
[nlauzon@server1 Glob]$ mv ~/glob.tar ~/Glob
[nlauzon@server1 Glob]$ ls -lh
total 96K
-rw-r--r--. 1 nlauzon nlauzon 8.5K Mar  7 03:28 glob.3
-rw-r--r--. 1 nlauzon nlauzon  12K Mar  7 03:28 glob.3p
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 03:28 glob.7
-rw-r--r--. 1 nlauzon nlauzon   16 Mar  7 03:28 globfree.3
-rw-r--r--. 1 nlauzon nlauzon   18 Mar  7 03:28 globfree.3p
-rw-r--r--. 1 nlauzon nlauzon 3.0K Mar  7 03:28 glob.h.0p
-rw-rw-r--. 1 nlauzon nlauzon  40K Mar  7 03:35 glob.tar
-rw-rw-r--. 1 nlauzon nlauzon  11K Mar  7 03:41 glob.tar.gz
[nlauzon@server1 Glob]$
```

6. Compare the size of the two files glob.tar and glob.tar.gz

Before I did that, I moved the archive glob.tar back to the Glob directory, to perform the comparison. The compression is nearly of 4 to 1 ratio.

```
nlauzon@server1:~/Glob                                      _  □  ×

File  Edit  View  Search  Terminal  Help
[nlauzon@server1 Glob]$ mv glob.tar ~
[nlauzon@server1 Glob]$ ls
glob.3  glob.3p  glob.7  globfree.3  globfree.3p  glob.h.0p
[nlauzon@server1 Glob]$ tar -cvzf glob.tar.gz glob*
glob.3
glob.3p
glob.7
globfree.3
globfree.3p
glob.h.0p
[nlauzon@server1 Glob]$ mv ~glob.tar ~/Glob
mv: cannot stat '~glob.tar': No such file or directory
[nlauzon@server1 Glob]$ mv ~/glob.tar ~/Glob
[nlauzon@server1 Glob]$ ls -lh
total 96K
-rw-r--r--. 1 nlauzon nlauzon 8.5K Mar  7 03:28 glob.3
-rw-r--r--. 1 nlauzon nlauzon  12K Mar  7 03:28 glob.3p
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 03:28 glob.7
-rw-r--r--. 1 nlauzon nlauzon   16 Mar  7 03:28 globfree.3
-rw-r--r--. 1 nlauzon nlauzon   18 Mar  7 03:28 globfree.3p
-rw-r--r--. 1 nlauzon nlauzon 3.0K Mar  7 03:28 glob.h.0p
-rw-rw-r--. 1 nlauzon nlauzon  40K Mar  7 03:35 glob.tar
-rw-rw-r--. 1 nlauzon nlauzon  11K Mar  7 03:41 glob.tar.gz
[nlauzon@server1 Glob]$
```

7. On your home directory, create a new directory named Glob2


```
                                    nlauzon@server1:~                    _  □  ×

File  Edit  View  Search  Terminal  Help
[nlauzon@server1 Glob]$ ls -lh
total 96K
-rw-r--r--. 1 nlauzon nlauzon 8.5K Mar  7 03:28 glob.3
-rw-r--r--. 1 nlauzon nlauzon  12K Mar  7 03:28 glob.3p
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 03:28 glob.7
-rw-r--r--. 1 nlauzon nlauzon   16 Mar  7 03:28 globfree.3
-rw-r--r--. 1 nlauzon nlauzon   18 Mar  7 03:28 globfree.3p
-rw-r--r--. 1 nlauzon nlauzon 3.0K Mar  7 03:28 glob.h.0p
-rw-rw-r--. 1 nlauzon nlauzon  40K Mar  7 03:35 glob.tar
-rw-rw-r--. 1 nlauzon nlauzon  11K Mar  7 03:41 glob.tar.gz
[nlauzon@server1 Glob]$ cd
[nlauzon@server1 ~]$ mkdir Glob2
[nlauzon@server1 ~]$ ls
Archive      Documents   magic1.gz    mysmb          sort1      Tmp1
bottomgroup  Downloads   magic2       newservices    sort2      Tmp2
computers    EXAM        mailports    Pictures       sort3      Tmp3
Desktop      file2       maintenance  PlanetsR       sortR      Trip3
dir1         Foods       Midterm2     PRINTS         sshdlist   Trips
dir2         Glob        mul_list     pro            SUN        Universe
doc1         Glob2       Music        PROJECTS       SUNTAR     Videos
doc2         html        mygroup      Public         SUNTARZ    yumdir
doc3         INDEX       mypasswd     shopping_list  SUNZ
DOCS         LAB6        myservices   smb            Templates
[nlauzon@server1 ~]$
```

8. Copy the file glob.tar.gz to the directory Glob2 then extract it.


```
                                  nlauzon@server1:~/Glob2                 _  □  ×

File  Edit  View  Search  Terminal  Help
doc2         html        mygroup      Public         SUNTARZ    yumdir
doc3         INDEX       mypasswd     shopping_list  SUNZ
DOCS         LAB6        myservices   smb            Templates
[nlauzon@server1 ~]$ cd Glob/glob.tar.gz Glob2
bash: cd: Glob/glob.tar.gz: Not a directory
[nlauzon@server1 ~]$ cd ~/Glob/glob.tar.gz Glob2
bash: cd: /home/nlauzon/Glob/glob.tar.gz: Not a directory
[nlauzon@server1 ~]$ cp Glob/glob.tar.gz Glob2
[nlauzon@server1 ~]$ ls Glob2
glob.tar.gz
[nlauzon@server1 ~]$ ls Glob2
glob.tar.gz
[nlauzon@server1 ~]$ cd Glob2
[nlauzon@server1 Glob2]$ tar -xzf glob.tar.gz
[nlauzon@server1 Glob2]$ ls -lh
total 56K
-rw-r--r--. 1 nlauzon nlauzon 8.5K Mar  7 03:28 glob.3
-rw-r--r--. 1 nlauzon nlauzon  12K Mar  7 03:28 glob.3p
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 03:28 glob.7
-rw-r--r--. 1 nlauzon nlauzon   16 Mar  7 03:28 globfree.3
-rw-r--r--. 1 nlauzon nlauzon   18 Mar  7 03:28 globfree.3p
-rw-r--r--. 1 nlauzon nlauzon 3.0K Mar  7 03:28 glob.h.0p
-rw-rw-r--. 1 nlauzon nlauzon  11K Mar  7 03:53 glob.tar.gz
[nlauzon@server1 Glob2]$
```

Nicolas Lauzon

9. On your home directory, create a new directory named Access

```
                              nlauzon@server1:~                    _  □  ×

 File  Edit  View  Search  Terminal  Help
[nlauzon@server1 Glob2]$ tar -xzf glob.tar.gz
[nlauzon@server1 Glob2]$ ls -lh
total 56K
-rw-r--r--. 1 nlauzon nlauzon 8.5K Mar  7 03:28 glob.3
-rw-r--r--. 1 nlauzon nlauzon  12K Mar  7 03:28 glob.3p
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 03:28 glob.7
-rw-r--r--. 1 nlauzon nlauzon   16 Mar  7 03:28 globfree.3
-rw-r--r--. 1 nlauzon nlauzon   18 Mar  7 03:28 globfree.3p
-rw-r--r--. 1 nlauzon nlauzon 3.0K Mar  7 03:28 glob.h.0p
-rw-rw-r--. 1 nlauzon nlauzon  11K Mar  7 03:53 glob.tar.gz
[nlauzon@server1 Glob2]$ cd ~
[nlauzon@server1 ~]$ mkdir Access
[nlauzon@server1 ~]$ ls
Access        DOCS       LAB6         myservices    smb        Templates
Archive       Documents  magic1.gz    mysmb         sort1      Tmp1
bottomgroup   Downloads  magic2       newservices   sort2      Tmp2
computers     EXAM       mailports    Pictures      sort3      Tmp3
Desktop       file2      maintenance  PlanetsR      sortR      Trip3
dir1          Foods      Midterm2     PRINTS        sshdlist   Trips
dir2          Glob       mul_list     pro           SUN        Universe
doc1          Glob2      Music        PROJECTS      SUNTAR     Videos
doc2          html       mygroup      Public        SUNTARZ    yumdir
doc3          INDEX      mypasswd     shopping_list SUNZ
[nlauzon@server1 ~]$
```

10. Find all the files starting with "access" and ending in ".gz" under the root (/) directory then copy them to your directory Access (to suppress the permission denied messages, redirect standard error to /dev/null)

```
                              nlauzon@server1:~                    _  □  ×

 File  Edit  View  Search  Terminal  Help
 700  ls
 701  tar -cvzf glob.tar.gz glob*
 702  mv ~glob.tar ~/Glob
 703  mv ~/glob.tar ~/Glob
 704  ls -lh
 705  cd ~
 706  mkdir Glob2
 707  ls
 708  cd Glob/glob.tar.gz Glob2
 709  cd ~/Glob/glob.tar.gz Glob2
 710  cp Glob/glob.tar.gz Glob2
 711  ls Glob2
 712  cd Glob2
 713  tar -xzf glob.tar.gz
 714  ls -lh
 715  cd ~
 716  mkdir Access
 717  ls
 718  history
[nlauzon@server1 ~]$ find / -type f -name "access*.gz" 2> /dev/null -exec cp {}
Access \;
[nlauzon@server1 ~]$ ls Access
access.2.gz  access.3p.gz  access.5.gz  access.conf.5.gz  accessdb.8.gz
[nlauzon@server1 ~]$
```

11. Decompress all the files of the directory Access.

```
                        nlauzon@server1:~/Access              _  □  ✕

File  Edit  View  Search  Terminal  Help
 709   cd ~/Glob/glob.tar.gz Glob2
 710   cp Glob/glob.tar.gz Glob2
 711   ls Glob2
 712   cd Glob2
 713   tar -xzf glob.tar.gz
 714   ls -lh
 715   cd ~
 716   mkdir Access
 717   ls
 718   history
[nlauzon@server1 ~]$ find / -type f -name "access*.gz" 2> /dev/null -exec cp {}
Access \;
[nlauzon@server1 ~]$ ls Access
access.2.gz  access.3p.gz  access.5.gz  access.conf.5.gz  accessdb.8.gz
[nlauzon@server1 ~]$ cd Access
[nlauzon@server1 Access]$ gunzip access*
[nlauzon@server1 Access]$ ls -lh
total 48K
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 04:01 access.2
-rw-r--r--. 1 nlauzon nlauzon 5.5K Mar  7 04:01 access.3p
-rw-r--r--. 1 nlauzon nlauzon  17K Mar  7 04:01 access.5
-rw-r--r--. 1 nlauzon nlauzon 7.2K Mar  7 04:01 access.conf.5
-rw-r--r--. 1 nlauzon nlauzon 2.2K Mar  7 04:01 accessdb.8
[nlauzon@server1 Access]$
```

12. Archive the directory Access to a file named Access.tar

```
                         nlauzon@server1:~                    _  □  ✕

File  Edit  View  Search  Terminal  Help
access.2.gz  access.3p.gz  access.5.gz  access.conf.5.gz  accessdb.8.gz
[nlauzon@server1 ~]$ cd Access
[nlauzon@server1 Access]$ gunzip access*
[nlauzon@server1 Access]$ ls -lh
total 48K
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 04:01 access.2
-rw-r--r--. 1 nlauzon nlauzon 5.5K Mar  7 04:01 access.3p
-rw-r--r--. 1 nlauzon nlauzon  17K Mar  7 04:01 access.5
-rw-r--r--. 1 nlauzon nlauzon 7.2K Mar  7 04:01 access.conf.5
-rw-r--r--. 1 nlauzon nlauzon 2.2K Mar  7 04:01 accessdb.8
[nlauzon@server1 Access]$ cd ~
[nlauzon@server1 ~]$ tar cf Access.tar Access
[nlauzon@server1 ~]$ ls
Access       doc3        INDEX        mypasswd       shopping_list   SUNZ
Access.tar   DOCS        LAB6         myservices     smb             Templates
Archive      Documents   magic1.gz    mysmb          sort1           Tmp1
bottomgroup  Downloads   magic2       newservices    sort2           Tmp2
computers    EXAM        mailports    Pictures       sort3           Tmp3
Desktop      file2       maintenance  PlanetsR       sortR           Trip3
dir1         Foods       Midterm2     PRINTS         sshdlist        Trips
dir2         Glob        mul_list     pro            SUN             Universe
doc1         Glob2       Music        PROJECTS       SUNTAR          Videos
doc2         html        mygroup      Public         SUNTARZ         yumdir
[nlauzon@server1 ~]$
```

13. List the contents of the directory archive Access.tar

14. Archive and compress the directory Access to a file named Access.tar.gz

15. List the contents of the compressed directory archive Access.tar.gz

```
                                nlauzon@server1:~                    _  □  ×

 File  Edit  View  Search  Terminal  Help
Access/access.5
Access/access.conf.5
Access/accessdb.8
[nlauzon@server1 ~]$ tar czf Access.tar.gz Access
[nlauzon@server1 ~]$ ls
Access          doc3       LAB6        mysmb          sort2       Tmp3
Access.tar      DOCS       magic1.gz   newservices    sort3       Trip3
Access.tar.gz   Documents  magic2      Pictures       sortR       Trips
Archive         Downloads  mailports   PlanetsR       sshdlist    Universe
bottomgroup     EXAM       maintenance PRINTS         SUN         Videos
computers       file2      Midterm2    pro            SUNTAR      yumdir
Desktop         Foods      mul_list    PROJECTS       SUNTARZ
dir1            Glob       Music       Public         SUNZ
dir2            Glob2      mygroup     shopping_list  Templates
doc1            html       mypasswd    smb            Tmp1
doc2            INDEX      myservices  sort1          Tmp2
[nlauzon@server1 ~]$ tar tf Access.tar.gz
Access/
Access/access.2
Access/access.3p
Access/access.5
Access/access.conf.5
Access/accessdb.8
[nlauzon@server1 ~]$
```

16. Compare the size of the two files Access.tar and Access.tar.gz

This is a compression ratio of roughly 3.5 to 1:

```
                                nlauzon@server1:~                    _  □  ×

 File  Edit  View  Search  Terminal  Help
Access/accessdb.8
[nlauzon@server1 ~]$ ls -lh Access*
-rw-rw-r--. 1 nlauzon nlauzon 50K Mar  7 04:12 Access.tar
-rw-rw-r--. 1 nlauzon nlauzon 14K Mar  7 04:16 Access.tar.gz

Access:
total 48K
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 04:01 access.2
-rw-r--r--. 1 nlauzon nlauzon 5.5K Mar  7 04:01 access.3p
-rw-r--r--. 1 nlauzon nlauzon  17K Mar  7 04:01 access.5
-rw-r--r--. 1 nlauzon nlauzon 7.2K Mar  7 04:01 access.conf.5
-rw-r--r--. 1 nlauzon nlauzon 2.2K Mar  7 04:01 accessdb.8
[nlauzon@server1 ~]$ ls -lh Acces*
-rw-rw-r--. 1 nlauzon nlauzon 50K Mar  7 04:12 Access.tar
-rw-rw-r--. 1 nlauzon nlauzon 14K Mar  7 04:16 Access.tar.gz

Access:
total 48K
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 04:01 access.2
-rw-r--r--. 1 nlauzon nlauzon 5.5K Mar  7 04:01 access.3p
-rw-r--r--. 1 nlauzon nlauzon  17K Mar  7 04:01 access.5
-rw-r--r--. 1 nlauzon nlauzon 7.2K Mar  7 04:01 access.conf.5
-rw-r--r--. 1 nlauzon nlauzon 2.2K Mar  7 04:01 accessdb.8
[nlauzon@server1 ~]$
```

17. On your home directory create two directories named: Java1 and Java2

```
                        nlauzon@server1:~                    _  □  ×

 File  Edit  View  Search  Terminal  Help
-rw-rw-r--. 1 nlauzon nlauzon 50K Mar  7 04:12 Access.tar
-rw-rw-r--. 1 nlauzon nlauzon 14K Mar  7 04:16 Access.tar.gz

Access:
total 48K
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 04:01 access.2
-rw-r--r--. 1 nlauzon nlauzon 5.5K Mar  7 04:01 access.3p
-rw-r--r--. 1 nlauzon nlauzon  17K Mar  7 04:01 access.5
-rw-r--r--. 1 nlauzon nlauzon 7.2K Mar  7 04:01 access.conf.5
-rw-r--r--. 1 nlauzon nlauzon 2.2K Mar  7 04:01 accessdb.8
[nlauzon@server1 ~]$ mkdir Java1 Java2
[nlauzon@server1 ~]$ ls
Access         doc3        Java1         mypasswd       smb        Tmp1
Access.tar     DOCS        Java2         myservices     sort1      Tmp2
Access.tar.gz  Documents   LAB6          mysmb          sort2      Tmp3
Archive        Downloads   magic1.gz     newservices    sort3      Trip3
bottomgroup    EXAM        magic2        Pictures       sortR      Trips
computers      file2       mailports     PlanetsR       sshdlist   Universe
Desktop        Foods       maintenance   PRINTS         SUN        Videos
dir1           Glob        Midterm2      pro            SUNTAR     yumdir
dir2           Glob2       mul_list      PROJECTS       SUNTARZ
doc1           html        Music         Public         SUNZ
doc2           INDEX       mygroup       shopping_list  Templates
[nlauzon@server1 ~]$
```

18. Find all filenames starting with "java" under /usr/share/vim directory and copy all found files to the directories Java1 and Java2

```
                        nlauzon@server1:~                    _  □  ×

 File  Edit  View  Search  Terminal  Help
Desktop        Foods       maintenance   PRINTS         SUN        Videos
dir1           Glob        Midterm2      pro            SUNTAR     yumdir
dir2           Glob2       mul_list      PROJECTS       SUNTARZ
doc1           html        Music         Public         SUNZ
doc2           INDEX       mygroup       shopping_list  Templates
[nlauzon@server1 ~]$ find /usr/share/vim -type f -name "java*"
/usr/share/vim/vim74/autoload/javascriptcomplete.vim
/usr/share/vim/vim74/compiler/javac.vim
/usr/share/vim/vim74/ftplugin/java.vim
/usr/share/vim/vim74/ftplugin/javascript.vim
/usr/share/vim/vim74/indent/java.vim
/usr/share/vim/vim74/indent/javascript.vim
/usr/share/vim/vim74/syntax/java.vim
/usr/share/vim/vim74/syntax/javacc.vim
/usr/share/vim/vim74/syntax/javascript.vim
[nlauzon@server1 ~]$ find /usr/share/vim -type f -name "java*" -exec cp {} Java1
\;
[nlauzon@server1 ~]$ find /usr/share/vim -type f -name "java*" -exec cp {} Java2
\;
[nlauzon@server1 ~]$ ls Java1
javacc.vim  javac.vim  javascriptcomplete.vim  javascript.vim  java.vim
[nlauzon@server1 ~]$ ls Java2
javacc.vim  javac.vim  javascriptcomplete.vim  javascript.vim  java.vim
[nlauzon@server1 ~]$
```

A note of caution on an issue that was raised in a previous assignment, that is, there are duplicate files. Once we use the copy command, the duplicates are subject to overwriting. Given that the question does not ask us to address that issue, I did not address that issue in any way or form. I just executed the copy command blindly. However, in the screen below, I show the files in their original locations that survive the copy command and are now found in Java1 and Java2:

19. Compress all the files of the directory Java1.

As a result of the copy command in question 18, only the 5 files that survived that command and are now in Java1 are compressed. I assume these files are sufficient for the purpose of this question, as well as of questions 20 and 21.

Specific to that question, the compression level is not mentioned, and therefore I go with the default (6). The compression ratio is a bit more than 2 to 1:

20. Archive and compress all the files located in the directory Java2 to a file named java.tar.gz

A rather good compression ratio accomplished with the tar command, at roughly 4 to 1, compared to that accomplished with gzip in question 19, at 2 to1.

```
                         nlauzon@server1:~/Java2                    _  □  ×

File  Edit  View  Search  Terminal  Help
-rw-r--r--. 1 nlauzon nlauzon  399 Mar  7 04:26 javac.vim
-rw-r--r--. 1 nlauzon nlauzon  27K Mar  7 04:26 javascriptcomplete.vim
-rw-r--r--. 1 nlauzon nlauzon 5.4K Mar  7 04:26 javascript.vim
-rw-r--r--. 1 nlauzon nlauzon  18K Mar  7 04:26 java.vim
[nlauzon@server1 ~]$ cd Java1
[nlauzon@server1 Java1]$ gzip java*
[nlauzon@server1 Java1]$ ls -lh
total 28K
-rw-r--r--. 1 nlauzon nlauzon 1.3K Mar  7 04:26 javacc.vim.gz
-rw-r--r--. 1 nlauzon nlauzon  286 Mar  7 04:26 javac.vim.gz
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 04:26 javascriptcomplete.vim.gz
-rw-r--r--. 1 nlauzon nlauzon 2.0K Mar  7 04:26 javascript.vim.gz
-rw-r--r--. 1 nlauzon nlauzon 5.2K Mar  7 04:26 java.vim.gz
[nlauzon@server1 Java1]$ cd ~/Java2
[nlauzon@server1 Java2]$ tar -czf java.tar.gz java*
[nlauzon@server1 Java2]$ ls -lh
total 80K
-rw-r--r--. 1 nlauzon nlauzon 2.7K Mar  7 04:26 javacc.vim
-rw-r--r--. 1 nlauzon nlauzon  399 Mar  7 04:26 javac.vim
-rw-r--r--. 1 nlauzon nlauzon  27K Mar  7 04:26 javascriptcomplete.vim
-rw-r--r--. 1 nlauzon nlauzon 5.4K Mar  7 04:26 javascript.vim
-rw-rw-r--. 1 nlauzon nlauzon  15K Mar  7 09:57 java.tar.gz
-rw-r--r--. 1 nlauzon nlauzon  18K Mar  7 04:26 java.vim
[nlauzon@server1 Java2]$
```

21. List the contents of the compressed archive file java.tar.gz

All the files are there:

```
                         nlauzon@server1:~/Java2                    _  □  ×

File  Edit  View  Search  Terminal  Help
[nlauzon@server1 Java1]$ ls -lh
total 28K
-rw-r--r--. 1 nlauzon nlauzon 1.3K Mar  7 04:26 javacc.vim.gz
-rw-r--r--. 1 nlauzon nlauzon  286 Mar  7 04:26 javac.vim.gz
-rw-r--r--. 1 nlauzon nlauzon 7.6K Mar  7 04:26 javascriptcomplete.vim.gz
-rw-r--r--. 1 nlauzon nlauzon 2.0K Mar  7 04:26 javascript.vim.gz
-rw-r--r--. 1 nlauzon nlauzon 5.2K Mar  7 04:26 java.vim.gz
[nlauzon@server1 Java1]$ cd ~/Java2
[nlauzon@server1 Java2]$ tar -czf java.tar.gz java*
[nlauzon@server1 Java2]$ ls -lh
total 80K
-rw-r--r--. 1 nlauzon nlauzon 2.7K Mar  7 04:26 javacc.vim
-rw-r--r--. 1 nlauzon nlauzon  399 Mar  7 04:26 javac.vim
-rw-r--r--. 1 nlauzon nlauzon  27K Mar  7 04:26 javascriptcomplete.vim
-rw-r--r--. 1 nlauzon nlauzon 5.4K Mar  7 04:26 javascript.vim
-rw-rw-r--. 1 nlauzon nlauzon  15K Mar  7 09:57 java.tar.gz
-rw-r--r--. 1 nlauzon nlauzon  18K Mar  7 04:26 java.vim
[nlauzon@server1 Java2]$ tar -tf java.tar.gz
javacc.vim
javac.vim
javascriptcomplete.vim
javascript.vim
java.vim
[nlauzon@server1 Java2]$
```