Network Engineering 2019 Exercises - Unit 1

1 Basic POSIX file permissions

Write a shell-script called `unit1-solution1.sh` that creates **directories** inside a directory called `unit1exercise1` with the following properties, and then creates a **compressed tar file** called `unit1-solution1.tgz`

1. `angesprachse`, mode `-w-rwx--x`
2. `angekletten`, mode `r-x--x-wx`
3. `angerauchte`, mode `-wx---r-x`
4. `ausgegehte`, mode `--xrw-rwx`
5. `aufgerauchse`, mode `rw-r-xr--`
6. `angehundt`, mode `rw--wxrw-`
7. `zersetztete`, mode `r------w-`
8. `einfahrte`, mode `r-xr-xr--`
9. `angehundt/eintritttete`, mode `r-x-wxr--`
10. `ausgegehte/anfahrung`, mode `-wxrw-r--`
11. `angehundt/gefahrte`, mode `-w-rwxrw-`
12. `einfahrte/besinntest`, mode `rw-r-----`
13. `ausgegehte/ausgeklettung`, mode `-wx-w--w-`
14. `einfahrte/besinntest/gefahrs`, mode `-w-r---w-`
15. `ausgegehte/anfahrung/aufgerauchen`, mode `r--r--r--`
16. `ausgegehte/anfahrung/angeklettkeit`, mode `r--rw--wx`
17. `angehundt/eintritttete/beklettte`, mode `rwxr-xrw-`
18. `einfahrte/besinntest/bekatzeung`, mode `r--r--r--`
19. `ausgegehte/anfahrung/zerklettheit`, mode `-----xrw-`
20. `ausgegehte/ausgeklettung/angehundte`, mode `rw-r-xrw-`

Your work will be **automatically marked** by comparing the contents of the compressed tar file against a template. Therefore it is important that you have every detail correct.

This exercise can be be completed using the `cd`, `mkdir`, `chown`, `chmod` and `sudo` shell commands, although you can use other shell commands if you wish.

An unsophisticated script to complete this would be 2456 bytes long, while a compact script would be no larger than 980.

Grading for this exercise for you is according to the following guide:

Requirement	Percentage
Correctness of solution	60%
Compactness of solution	40%

The compactness scores are according to the following table:

Length of script	Percentage
2457 bytes or more	0%
1719 – 2456 bytes	5%
981 – 1718 bytes	15%
834 – 980 bytes	25%
less than 834 bytes	40%

To test your solution, use a command like:

```
sudo tar zcf unit1-solution1.tgz unit1exercise1
./unit1-exercise-1-grade.sh unit1-solution1.sh
```

To submit your solution (which you can do as many times as you like), use a command like:

```
sudo tar zcf unit1-solution1.tgz unit1exercise1
git add unit1-solution1.sh unit1-solution1.tgz
git commit unit1-solution1.sh unit1-solution1.tgz
git push origin master
```

2 User and groups

Write a shell-script called `unit1-solution2.sh` that creates **directories** inside a directory called `unit1exercise2` with the following properties, and then creates a **compressed tar file** called `unit1-solution2.tgz`

1. `aufgeklettst`, mode `-w-rw-r-x`, owner `news`, group `proxy`
2. `gespracht`, mode `-wx--xrwx`, owner `nobody`, group `proxy`
3. `einsprachse`, mode `-w-rwxr-x`, owner `student`, group `cdrom`
4. `gekatzetest`, mode `rw--wxrwx`, owner `lp`, group `tape`
5. `aufgefahrkeit`, mode `----wxr-x`, owner `proxy`, group `proxy`
6. `aufkatzes`, mode `rwx--x-wx`, owner `games`, group `uucp`

7. `ausgesinnkeit`, mode `--x-----x`, owner `news`, group `news`
8. `geklettst`, mode `--xrw--w-`, owner `games`, group `tape`
9. `aufkatzes/zersetzte`, mode `-w--w---x`, owner `lp`, group `news`
10. `aufgeklettst/ausgerenntest`, mode `-w--wx---`, owner `mail`, group `voice`
11. `gekatzetest/aufsinnse`, mode `--xrw-rwx`, owner `proxy`, group `dip`
12. `gespracht/aufgehaltung`, mode `---r-x-wx`, owner `mail`, group `student`
13. `einsprachse/angefahrte`, mode `-w-r--r-x`, owner `student`, group `mail`
14. `gekatzetest/aufsinnse/angegehst`, mode `r-xr-x--x`, owner `mail`, group `fax`
15. `einsprachse/angefahrte/angekrauheit`, mode `----w-r--`, owner `student`, group `cdrom`
16. `aufkatzes/zersetzte/eintrittung`, mode `rw-rwx-wx`, owner `uucp`, group `tape`
17. `gespracht/aufgehaltung/gekrause`, mode `--x-wx--x`, owner `mail`, group `dip`
18. `aufgeklettst/ausgerenntest/ausgepflumst`, mode `r-x-wx-w-`, owner `nobody`, group `dip`
19. `gekatzetest/aufsinnse/zerkletts`, mode `-w---xr-x`, owner `games`, group `audio`
20. `gespracht/aufgehaltung/ausgefahrtete`, mode `rwxrwx--x`, owner `student`, group `student`

Your work will be **automatically marked** by comparing the contents of the compressed tar file against a template. Therefore it is important that you have every detail correct.

This exercise can be be completed using the `cd`, `mkdir`, `chown`, `chmod` and `sudo` shell commands, although you can use other shell commands if you wish.

An unsophisticated script to complete this would be 2408 bytes long, while a compact script would be no larger than 1220.

Grading for this exercise for you is according to the following guide:

Requirement	Percentage
Correctness of solution	60%
Compactness of solution	40%

The compactness scores are according to the following table:

Length of script	Percentage
2409 bytes or more	0%
1815 – 2408 bytes	5%
1221 – 1814 bytes	15%
1038 – 1220 bytes	25%
less than 1038 bytes	40%

To test your solution, use a command like:

```
sudo tar zcf unit1-solution2.tgz unit1exercise2
./unit1-exercise-2-grade.sh unit1-solution2.sh
```

To submit your solution (which you can do as many times as you like), use a command like:

```
sudo tar zcf unit1-solution2.tgz unit1exercise2
git add unit1-solution2.sh unit1-solution2.tgz
git commit unit1-solution2.sh unit1-solution2.tgz
git push origin master
```

3 Set-user and Set-group ID

Write a shell-script called `unit1-solution3.sh` that creates **directories** inside a directory called `unit1exercise3` with the following properties, and then creates a **compressed tar file** called `unit1-solution3.tgz`

1. `zertraute`, mode `r--rwx--x`, owner `games`, group `fax`, `setuid`
2. `berabarbs`, mode `r---wx-w-`, owner `lp`, group `dip`
3. `aufgehung`, mode `-w-rw----`, owner `news`, group `audio`, `setuid`
4. `anrabarbt`, mode `----wx--x`, owner `games`, group `audio`, `setuid`
5. `aufwarfheit`, mode `-wx-w-r--`, owner `news`, group `fax`, `setuid`
6. `ausgeklettst`, mode `rwxr-x---`, owner `student`, group `tape`
7. `auftrauer`, mode `----w-r-x`, owner `nobody`, group `uucp`, `setuid`
8. `zerstehung`, mode `rw--w-r--`, owner `student`, group `student`
9. `aufgehung/angegehse`, mode `--x---r--`, owner `proxy`, group `floppy`, `setuid`
10. `aufgehung/zersprachheit`, mode `-----xr--`, owner `uucp`, group `voice`
11. `auftrauer/angetritttest`, mode `r--r-xrw-`, owner `uucp`, group `news`
12. `aufwarfheit/aufwitzung`, mode `rwxr-----`, owner `student`, group `voice`

13. `zerstehung/angekraus`, mode `rw-rw-rw-`, owner `nobody`, group `dip`, `setuid`
14. `aufgehung/angegehse/behaltt`, mode `--x-wx-wx`, owner `news`, group `voice`
15. `aufgehung/angegehse/bewitzheit`, mode `r-x-w-r-x`, owner `uucp`, group `dip`
16. `zerstehung/angekraus/zergehse`, mode `--x-w--wx`, owner `student`, group `mail`, `setuid`
17. `aufgehung/angegehse/aufgesprachtest`, mode `----wx-w-`, owner `news`, group `uucp`
18. `aufgehung/angegehse/gewarfer`, mode `--x-wxrw-`, owner `nobody`, group `tape`, `setuid`
19. `aufwarfheit/aufwitzung/zerrabarben`, mode `rw-----w-`, owner `lp`, group `mail`
20. `aufwarfheit/aufwitzung/aussetzte`, mode `--xrwx-wx`, owner `student`, group `proxy`, `setuid`

Your work will be **automatically marked** by comparing the contents of the compressed tar file against a template. Therefore it is important that you have every detail correct.

This exercise can be be completed using the `cd`, `mkdir`, `chown`, `chmod` and `sudo` shell commands, although you can use other shell commands if you wish.

An unsophisticated script to complete this would be 2326 bytes long, while a compact script would be no larger than 1249.

Grading for this exercise for you is according to the following guide:

Requirement	Percentage
Correctness of solution	60%
Compactness of solution	40%

The compactness scores are according to the following table:

Length of script	Percentage
2327 bytes or more	0%
1788 – 2326 bytes	5%
1250 – 1787 bytes	15%
1062 – 1249 bytes	25%
less than 1062 bytes	40%

To test your solution, use a command like:

```
sudo tar zcf unit1-solution3.tgz unit1exercise3
./unit1-exercise-3-grade.sh unit1-solution3.sh
```

To submit your solution (which you can do as many times as you like), use a command like:

```
sudo tar zcf unit1-solution3.tgz unit1exercise3
git add unit1-solution3.sh unit1-solution3.tgz
git commit unit1-solution3.sh unit1-solution3.tgz
git push origin master
```

4 Set-group ID Directories

Write a shell-script called `unit1-solution4.sh` that creates **directories** inside a directory called `unit1exercise4` with the following properties, and then creates a **compressed tar file** called `unit1-solution4.tgz`

1. `behalttete`, mode `rwxr---wx`, group `student`
2. `ausgetrittkeit`, mode `r-xrwxr--`, group `news`
3. `ausgerauchen`, mode `-wx--x---`, group `mail`
4. `beklettest`, mode `-w---x-wx`, group `floppy`
5. `auffahrer`, mode `rw---x-wx`, group `tape`
6. `anpflumtest`, mode `--x-w-r-x`, group `mail`, `setgid`
7. `eingehen`, mode `--xrw-rw-`, group `dip`, `setgid`
8. `aufraucher`, mode `r-xrw---x`, group `proxy`, `setgid`
9. `ausgerauchen/aufsetzte`, mode `-w----r-x`, group `voice`
10. `anpflumtest/angepflumkeit`, mode `--x-----x`, group `cdrom`
11. `eingehen/belaufung`, mode `-wxr-x--x`, group `cdrom`
12. `anpflumtest/angesprachung`, mode `rwx-w----`, group `dip`, `setgid`
13. `anpflumtest/bespracher`, mode `-wxrwx---`, group `news`, `setgid`
14. `anpflumtest/angesprachung/angekatzetete`, mode `--xr-x--x`, group `dip`
15. `anpflumtest/angepflumkeit/angeraucher`, mode `rw-r--rwx`, group `proxy`
16. `anpflumtest/angepflumkeit/betritter`, mode `rwx---rwx`, group `student`
17. `anpflumtest/angepflumkeit/aufsteher`, mode `r-xr-xr-x`, group `voice`
18. `eingehen/belaufung/ansinnheit`, mode `r-xr---w-`, group `dip`
19. `eingehen/belaufung/angewarftest`, mode `----wx-w-`, group `cdrom`

20. `ausgerauchen/aufsetzte/aufsinnt`, mode `rw-rw--w-`, group `floppy`, `setgid`

Your work will be **automatically marked** by comparing the contents of the compressed tar file against a template. Therefore it is important that you have every detail correct.

This exercise can be be completed using the `cd`, `mkdir`, `chown`, `chmod` and `sudo` shell commands, although you can use other shell commands if you wish.

An unsophisticated script to complete this would be 2472 bytes long, while a compact script would be no larger than 1119.

Grading for this exercise for you is according to the following guide:

Requirement	Percentage
Correctness of solution	60%
Compactness of solution	40%

The compactness scores are according to the following table:

Length of script	Percentage
2473 bytes or more	0%
1796 – 2472 bytes	5%
1120 – 1795 bytes	15%
952 – 1119 bytes	25%
less than 952 bytes	40%

To test your solution, use a command like:

```
sudo tar zcf unit1-solution4.tgz unit1exercise4
./unit1-exercise-4-grade.sh unit1-solution4.sh
```

To submit your solution (which you can do as many times as you like), use a command like:

```
sudo tar zcf unit1-solution4.tgz unit1exercise4
git add unit1-solution4.sh unit1-solution4.tgz
git commit unit1-solution4.sh unit1-solution4.tgz
git push origin master
```

5 Interpreting File Permissions

For each of the following exercises, determine whether the given file or directory can be accessed in the manner described. Remember that file or directory access can be mediated by owner, group or other permissions, and that the first matching item applies.

As you have a 50% chance of getting each item correct, you must score more than 50% to obtain a positive result for this section. There are 40 questions, and your score will be $(n - 20)/20$, where n is the number of correct responses.

You should record your answers in a single text file called unit1-answers.txt, consisting of 40 consecutive `Y`, `1`, `2` or `3` characters on a single line.

To submit your answers (which you can do as many times as you like), commit your answer file to your git repository, and push it to github, e.g.:
`git add unit1-answers.txt ; git commit unit1-answers.txt ; git push origin master`

At the end of this section there is a hash which reflects the hash of the correct result of all 40 questions. You can use this to check if you have all answers correct. However, it will not tell you how many you have correct (that would let you work out which ones were wrong through a process of elimination.

5.1

Can the user **proxy**, who is a member of the **cdrom** group, **execute** the file `/eingehkeit/aufrabarbse/angesinnheit`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drwxrwx--x    games    cdrom     0 eingehkeit
   └─ (2)    d------r-x     mail   floppy     0 aufrabarbse
      └─ (3) ---xrwx-w-    games    cdrom     0 angesinnheit
```

5.2

Can the user **student**, who is a member of the **news** group, **execute** the file `/einspracht/austraust/zerrennt`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drwx-wx--x  student     mail     0 einspracht
   └─ (2)    d-wx---rwx     mail     mail     0 austraust
      └─ (3) -rw-rwxr-x  student    voice     0 zerrennt
```

5.3

Can the user **lp**, who is a member of the **dip** group, **read from** the file `/anhunds/einrabarbst/einkatzeung`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d---rw-r-x     news     news     0 anhunds
   └─ (2)    d--xr-xr--   nobody      dip     0 einrabarbst
      └─ (3) -r-xrw---x       lp     mail     0 einkatzeung
```

5.4

Can the user **news**, who is a member of the **uucp** group, **write to** the file `/aufrabarbtete/verstehtest/aufkrauung`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drw--w-r-x     uucp     news     0 aufrabarbtete
   └─ (2)    d---r-xrw-    games     uucp     0 verstehtest
      └─ (3) -r-x-wx---     news    floppy    0 aufkrauung
```

5.5

Can the user **news**, who is a member of the **cdrom** group, **read from** the file `/angerauchen/aufstehse/angesetzen`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-x-w--w-     news     news     0 angerauchen
   └─ (2)    dr---w-r-x  student    cdrom     0 aufstehse
      └─ (3) -r-----r-x     news     news     0 angesetzen
```

5.6

Can the user **proxy**, who is a member of the **audio** group, **write to** the file `/aufsprachtest/zerhundtete/anwitzheit`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-----xr-x     news     tape     0 aufsprachtest
   └─ (2)    drwxrw-rwx    proxy      fax     0 zerhundtete
      └─ (3) -r-x-w--w-     mail    audio     0 anwitzheit
```

5.7

Can the user **lp**, who is a member of the **voice** group, **write to** the file `/gegehung/anfahrtete/verstehung`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-wxrwx--x   nobody    voice     0 gegehung
   └─ (2)    d-wxr-xr-x   nobody     uucp     0 anfahrtete
      └─ (3) -----wxr--       lp      fax     0 verstehung
```

5.8

Can the user **games**, who is a member of the **student** group, **execute** the file `/gekaeskeit/antrittheit/betrittkeit`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-xr-x-w-   nobody      dip     0 gekaeskeit
   └─ (2)    d-w----rwx     news    audio     0 antrittheit
      └─ (3) -rwx--x--x     news     mail     0 betrittkeit
```

5.9

Can the user **lp**, who is a member of the **news** group, **write to** the file `/betrittst/ausgeklettse/eintrauung`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--x-w-rwx     news     mail     0 betrittst
   └─ (2)    drwx-wx---       lp     tape     0 ausgeklettse
      └─ (3) -r--rwxr-x       lp    cdrom     0 eintrauung
```

5.10

Can the user **games**, who is a member of the **uucp** group, **read from** the file `/einklettst/enrabarbkeit/anpflumen`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d---rwxr-x  student     uucp     0 einklettst
   └─ (2)    dr-x-wx-w-    games     news     0 enrabarbkeit
      └─ (3) -rwx-wx-wx    games    audio     0 anpflumen
```

5.11

Can the user **lp**, who is a member of the **fax** group, **execute** the file `/angerabarbtete/ausgetrautest/aufkle`
If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--xr-x--x   nobody      fax     0 angerabarbtete
   └─ (2)    drw-r-xrwx  student      dip     0 ausgetrautest
      └─ (3) ------x--x       lp    cdrom     0 aufklettse
```

5.12

Can the user **lp**, who is a member of the **floppy** group, **write to** the file `/auftraut/bepflumung/enrauchtete`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-wxr-x---    games     news     0 auftraut
   └─ (2)    d---rwxr-x     mail     tape     0 bepflumung
      └─ (3) -r--r---wx    games     news     0 enrauchtete
```

5.13

Can the user **lp**, who is a member of the **student** group, **execute** the file `/aufgesprachtete/gekraust/einfahrt`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr--rwxr-x    games     tape     0 aufgesprachtete
   └─ (2)    d-wx---r-x     uucp     mail     0 gekraust
      └─ (3) ------xrw-       lp    cdrom     0 einfahrt
```

5.14

Can the user **lp**, who is a member of the **floppy** group, **write to** the file `/enwitzte/gewitzte/aufhaltte`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--x-wx---  student    cdrom     0 enwitzte
   └─ (2)    dr--rw-rwx    proxy    audio     0 gewitzte
      └─ (3) -r---wx-wx     news   floppy     0 aufhaltte
```

5.15

Can the user **proxy**, who is a member of the **fax** group, **execute** the file `/einsprachte/ankatzet/bekatzeer`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-xrwxr-x    proxy      fax     0 einsprachte
   └─ (2)    d-----xrwx   nobody     uucp     0 ankatzet
      └─ (3) -----wxr-x     news      dip     0 bekatzeer
```

5.16

Can the user **student**, who is a member of the **audio** group, **write to** the file `/aufgelauft/ausgeraucht/anrabarbst`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drwxr-xrw-     news    audio     0 aufgelauft
   └─ (2)    drwx----wx    proxy    audio     0 ausgeraucht
      └─ (3) -r--rwxr--     news    audio     0 anrabarbst
```

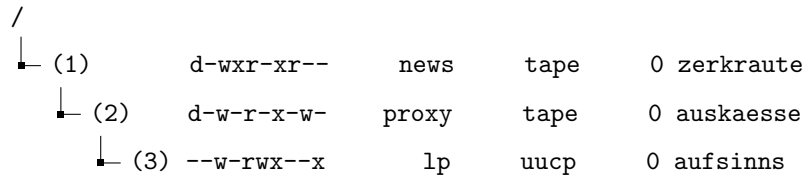
5.17

Can the user **nobody**, who is a member of the **news** group, **execute** the file `/anwarfse/aufgefahrtest/bekaesheit`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drwx----w-   nobody      dip     0 anwarfse
   └─ (2)    d-wx----w-     uucp     news     0 aufgefahrtest
      └─ (3) ----r-x-wx     uucp    cdrom     0 bekaesheit
```

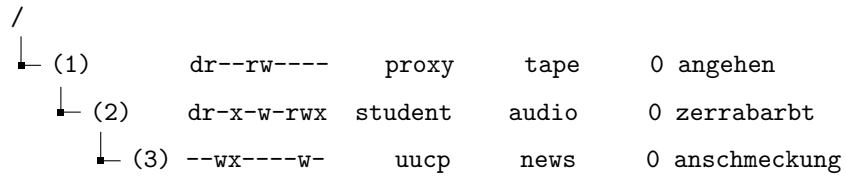
5.18

Can the user **lp**, who is a member of the **tape** group, **read from** the file `/zerkraute/auskaesse/aufsinns`? If not, which of the three directories blocks access (Y|1|2|3)



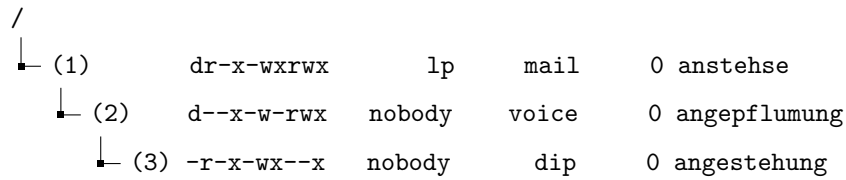
5.19

Can the user **uucp**, who is a member of the **voice** group, **execute** the file `/angehen/zerrabarbt/anschmeckung`? If not, which of the three directories blocks access (Y|1|2|3)



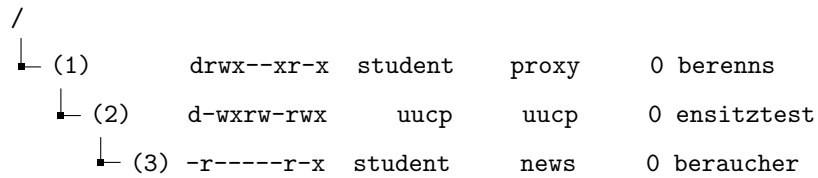
5.20

Can the user **lp**, who is a member of the **dip** group, **write to** the file `/anstehse/angepflumung/angestehung`? If not, which of the three directories blocks access (Y|1|2|3)



5.21

Can the user **student**, who is a member of the **voice** group, **read from** the file `/berenns/ensitztest/beraucher`? If not, which of the three directories blocks access (Y|1|2|3)



5.22

Can the user **mail**, who is a member of the **news** group, **execute** the file `/einlaufst/anraucher/ausgerennte`? If not, which of the three directories

blocks access (Y|1|2|3)

```
/
└─ (1)       d-wxr-x---  student     news     0 einlaufst
   └─ (2)    dr-xr-x---        lp     news     0 anraucher
      └─ (3) -----wxr--    games     news     0 ausgerennte
```

5.23

Can the user **news**, who is a member of the **student** group, **write to** the file `/betraukeit/eingehung/angepflumkeit`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drw---xrwx     mail     tape     0 betraukeit
   └─ (2)    drwx----w-     news    audio     0 eingehung
      └─ (3) -rw-rw-rwx  student     tape     0 angepflumkeit
```

5.24

Can the user **lp**, who is a member of the **uucp** group, **write to** the file `/angekatzet/verkatzete/auftrauen`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-x-wx-wx       lp    proxy     0 angekatzet
   └─ (2)    drw-rw-r-x    proxy   floppy     0 verkatzete
      └─ (3) -rw-rw----       lp    proxy     0 auftrauen
```

5.25

Can the user **student**, who is a member of the **news** group, **write to** the file `/anfahrse/enfahrse/angewitzst`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-xrwx--x  student   floppy     0 anfahrse
   └─ (2)    d-wx---r--      uucp     news     0 enfahrse
      └─ (3) -rwxr-xrwx    games     mail     0 angewitzst
```

5.26

Can the user **lp**, who is a member of the **voice** group, **execute** the file `/enhalten/einsitzer/besinnen`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d---rwxr--   nobody    voice     0 enhalten
   └─ (2)    drwx---r--       lp     tape      0 einsitzer
      └─ (3) -r-x-w-r-x       lp      fax      0 besinnen
```

5.27

Can the user **proxy**, who is a member of the **audio** group, **read from** the file `/aufgekrauung/angetrautest/gegehtete`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drw--wx-w-       lp    cdrom     0 aufgekrauung
   └─ (2)    d--xr-x--x    games    audio     0 angetrautest
      └─ (3) ---xr--r--  student    cdrom     0 gegehtete
```

5.28

Can the user **student**, who is a member of the **tape** group, **write to** the file `/aufgetritttest/angesinntest/angerabarbs`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drwx-wx---  student    voice     0 aufgetritttest
   └─ (2)    dr-xr--r-x  student     tape     0 angesinntest
      └─ (3) -rwxrw--wx  student     news     0 angerabarbs
```

5.29

Can the user **lp**, who is a member of the **tape** group, **read from** the file `/aufgewarfs/bekatzes/aufrauchs`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-x---r-x    proxy    voice     0 aufgewarfs
   └─ (2)    drwx--x-w-       lp      fax     0 bekatzes
      └─ (3) -rwx-wx--x       lp     tape     0 aufrauchs
```

5.30

Can the user **mail**, who is a member of the **mail** group, **write to** the file `/verwarftete/anhundse/einstehung`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-x--x---     mail    audio     0 verwarftete
   └─ (2)    d-w-rw-rwx     news    audio     0 anhundse
      └─ (3) ----r-xrwx     news      dip     0 einstehung
```

5.31

Can the user **student**, who is a member of the **cdrom** group, **execute** the file `/aufgefahrst/zerklettkeit/einrabarbtete`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-w-r-x-wx   nobody    cdrom     0 aufgefahrst
   └─ (2)    d-w-r-xrw-    games    cdrom     0 zerklettkeit
      └─ (3) ---x-wx-wx   nobody    cdrom     0 einrabarbtete
```

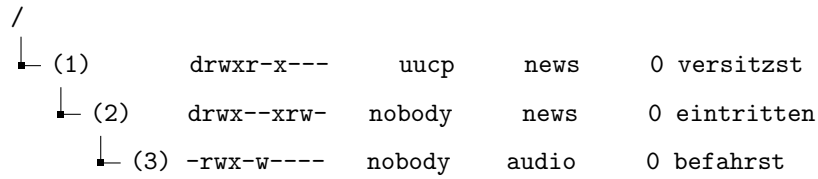
5.32

Can the user **student**, who is a member of the **mail** group, **write to** the file `/angesitzkeit/verrauchung/auskatzet`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       drwx-wx---    proxy     news     0 angesitzkeit
   └─ (2)    dr-xr-xr-x     uucp      fax     0 verrauchung
      └─ (3) -rw-rw-rwx       lp     mail     0 auskatzet
```

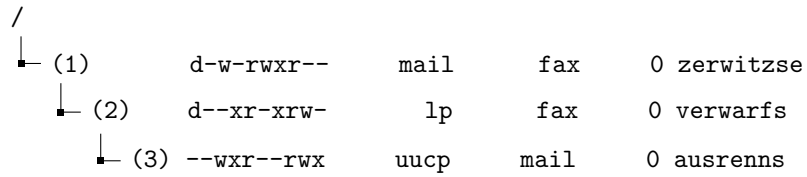
5.33

Can the user **nobody**, who is a member of the **news** group, **write to** the file `/versitzst/eintritten/befahrst`? If not, which of the three directories blocks access (Y|1|2|3)



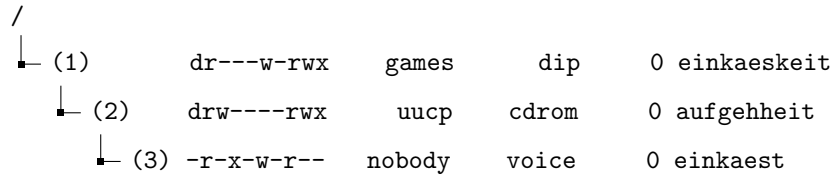
5.34

Can the user **uucp**, who is a member of the **fax** group, **read from** the file `/zerwitzse/verwarfs/ausrenns`? If not, which of the three directories blocks access (Y|1|2|3)



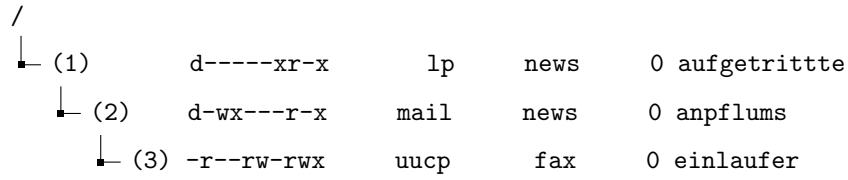
5.35

Can the user **nobody**, who is a member of the **voice** group, **read from** the file `/einkaeskeit/aufgehheit/einkaest`? If not, which of the three directories blocks access (Y|1|2|3)



5.36

Can the user **uucp**, who is a member of the **mail** group, **read from** the file `/aufgetrittte/anpflums/einlaufer`? If not, which of the three directories blocks access (Y|1|2|3)



5.37

Can the user **uucp**, who is a member of the **fax** group, **write to** the file `/betrause/besetzs/zertrittt`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--x-w-rwx     mail     uucp     0 betrause
   └─ (2)    dr-xrwxr-x     uucp     tape     0 besetzs
      └─ (3) --wx-wxr--     uucp      fax     0 zertrittt
```

5.38

Can the user **nobody**, who is a member of the **tape** group, **execute** the file `/gerabarber/anhunder/zerkletten`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-xr-xrwx     news     tape     0 gerabarber
   └─ (2)    dr--r-x---  student     tape     0 anhunder
      └─ (3) -r-x------   nobody     mail     0 zerkletten
```

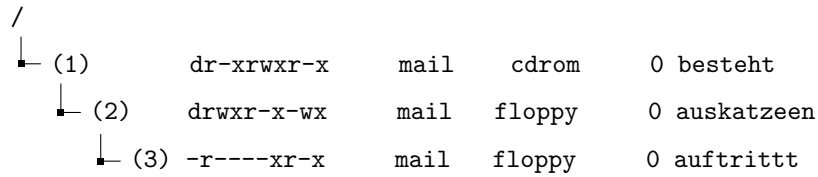
5.39

Can the user **uucp**, who is a member of the **fax** group, **write to** the file `/geklettkeit/ausstehung/zerlauftete`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--xr-xr-x   nobody      fax     0 geklettkeit
   └─ (2)    dr----xr-x     mail      dip     0 ausstehung
      └─ (3) ---x--xrw-   nobody    proxy     0 zerlauftete
```

5.40

Can the user **mail**, who is a member of the **tape** group, **execute** the file `/besteht/auskatzeen/auftrittt`? If not, which of the three directories blocks access (Y|1|2|3)



Hash for checking if you have all 40 correct

4cb85e9bbb97415a5ee728acd31929598b1fdfe56a04b8ed66ce0f11528ec1c1

You can check your result with a command like:

```
echo "2YY13YY2YYYY3Y3YY2Y22YY11Y2Y1YY2YYY3Y3YY" | \
       shasum -a 512 | cut -c1-64
```

(But don't forget to put your string of Y's and N's in place of those)

If the output of that command matches the hash at the end of this section, then you almost certainly have all 40 correct.