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-exercise1.tgz`

1. `ensetztete`, mode `--xrw--w-`
2. `vertrittst`, mode `rwx--x-w-`
3. `verhunden`, mode `--xr---wx`
4. `anfahrs`, mode `r-x--x-w-`
5. `angekaeskeit`, mode `rw----r--`
6. `aussprachse`, mode `rwx--xr-x`
7. `aufkaeskeit`, mode `r---wx--x`
8. `angewitzung`, mode `---rw--w-`
9. `angewitzung/belauft`, mode `r--r---w-`
10. `aussprachse/ausschmeckkeit`, mode `rw--w-r-x`
11. `angekaeskeit/aufrennkeit`, mode `--xr-x-wx`
12. `angewitzung/ausrabarbt`, mode `rwxrw--w-`
13. `anfahrs/eintrauer`, mode `rw----rw-`
14. `anfahrs/eintrauer/zertritttest`, mode `---r-x-wx`
15. `anfahrs/eintrauer/auswitzte`, mode `r--rw-rwx`
16. `anfahrs/eintrauer/auskatzeheit`, mode `rw-r-x-w-`
17. `angewitzung/belauft/anpflumer`, mode `r-x-wx--x`
18. `anfahrs/eintrauer/gekrause`, mode `--xrw--wx`
19. `angewitzung/ausrabarbt/ensitzse`, mode `--xrw----`
20. `angekaeskeit/aufrennkeit/ausgekrautete`, mode `-w-r-----`

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 2410 bytes long, while a compact script would be no larger than 969.

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
2411 bytes or more	0%
1690 – 2410 bytes	5%
970 – 1689 bytes	15%
824 – 969 bytes	25%
less than 824 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-solution1689.sh unit1-solution650059192.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-exercise2.tgz`

1. `aufsinner`, mode `rw-r-xr--`, owner `lp`, group `mail`
2. `ausgesprachkeit`, mode `rw---xrwx`, owner `games`, group `student`
3. `aufgestehst`, mode `---r--rw-`, owner `news`, group `fax`
4. `angelaufs`, mode `-w-r-----`, owner `nobody`, group `dip`
5. `angepflumer`, mode `-wxrw-rwx`, owner `proxy`, group `student`
6. `auskraus`, mode `-----xr--`, owner `lp`, group `dip`

7. `auftraukeit`, mode `rw-rw--wx`, owner `student`, group `news`
8. `aussetzer`, mode `r--r--r--`, owner `uucp`, group `floppy`
9. `auskraus/zersetzen`, mode `--xr--rwx`, owner `lp`, group `student`
10. `aufsinner/einsinner`, mode `-----x--x`, owner `uucp`, group `proxy`
11. `aufsinner/enhalter`, mode `-wxrw-rw-`, owner `proxy`, group `tape`
12. `angelaufs/berennkeit`, mode `-wx----wx`, owner `news`, group `tape`
13. `auskraus/aufgekrauen`, mode `--xr-xrwx`, owner `mail`, group `voice`
14. `angelaufs/berennkeit/aufgesinns`, mode `r-x------`, owner `nobody`, group `tape`
15. `aufsinner/enhalter/angehtete`, mode `-wxr-x-w-`, owner `uucp`, group `cdrom`
16. `aufsinner/einsinner/angesetzen`, mode `r---wxrw-`, owner `news`, group `uucp`
17. `aufsinner/einsinner/verkatzekeit`, mode `rw-rw-rwx`, owner `games`, group `cdrom`
18. `angelaufs/berennkeit/ausgerauchse`, mode `r-xr-xrw-`, owner `student`, group `audio`
19. `angelaufs/berennkeit/angespracher`, mode `--------x`, owner `nobody`, group `audio`
20. `auskraus/zersetzen/angekatzetete`, mode `r-x--xr-x`, owner `news`, group `uucp`

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 2302 bytes long, while a compact script would be no larger than 1226.

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
2303 bytes or more	0%
1765 – 2302 bytes	5%
1227 – 1764 bytes	15%
1043 – 1226 bytes	25%
less than 1043 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-solution1764.sh unit1-solution650059192.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-exercise3.tgz`

1. `bekatzest`, mode `r---w--w-`, owner `nobody`, group `news`, `setuid`
2. `aufgekletten`, mode `r--r-----`, owner `news`, group `audio`
3. `gerabarbung`, mode `-wx-w----`, owner `student`, group `audio`
4. `befahrheit`, mode `rwxr--rwx`, owner `nobody`, group `uucp`
5. `enkatzet`, mode `rwx-wxr--`, owner `nobody`, group `mail`
6. `berabarber`, mode `r---wx-w-`, owner `nobody`, group `mail`, `setuid`
7. `zerhaltst`, mode `---rw--w-`, owner `lp`, group `proxy`, `setuid`
8. `zersitzt`, mode `--xr-x---`, owner `games`, group `fax`
9. `zerhaltst/ausgehundtete`, mode `---rwx-w-`, owner `mail`, group `fax`, `setuid`
10. `zersitzt/aussinner`, mode `---r-x-w-`, owner `student`, group `floppy`, `setuid`
11. `zerhaltst/aussinntest`, mode `rw-rwx-w-`, owner `lp`, group `uucp`

12. `aufgekletten/ausgekraut`, mode `--x---r-x`, owner `games`, group `dip`, `setuid`
13. `befahrheit/einkraute`, mode `-w---xr--`, owner `mail`, group `floppy`, `setuid`
14. `zerhaltst/ausgehundtete/zertrauen`, mode `rw--wxrwx`, owner `mail`, group `voice`
15. `zerhaltst/ausgehundtete/einstehse`, mode `rwxrwxr--`, owner `mail`, group `dip`, `setuid`
16. `aufgekletten/ausgekraut/aussitzer`, mode `-wxrw-rwx`, owner `news`, group `student`
17. `befahrheit/einkraute/angerabarbs`, mode `rw-r-x--x`, owner `student`, group `fax`, `setuid`
18. `aufgekletten/ausgekraut/angesprachung`, mode `r-x-wx---`, owner `news`, group `cdrom`
19. `befahrheit/einkraute/entraust`, mode `rwx--xrwx`, owner `proxy`, group `voice`, `setuid`
20. `zerhaltst/aussinntest/ausgesitztete`, mode `----wx---`, owner `news`, group `student`, `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 2372 bytes long, while a compact script would be no larger than 1217.

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
2373 bytes or more	0%
1795 – 2372 bytes	5%
1218 – 1794 bytes	15%
1035 – 1217 bytes	25%
less than 1035 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-solution1794.sh unit1-solution650059192.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-exercise4.tgz`

1. `aufgesitzen`, mode `---rwx--x`, group `voice`, `setgid`
2. `aufgepflumheit`, mode `--xr-xrwx`, group `tape`, `setgid`
3. `angehheit`, mode `r-xr--r--`, group `tape`
4. `anrabarbs`, mode `-w----rw-`, group `news`, `setgid`
5. `aussinnst`, mode `r-----rw-`, group `fax`, `setgid`
6. `angelaufheit`, mode `----w----`, group `cdrom`, `setgid`
7. `angelauft`, mode `r---wx--x`, group `fax`, `setgid`
8. `zerrauchse`, mode `r--rw-r-x`, group `proxy`
9. `zerrauchse/aufklettte`, mode `rwx------`, group `voice`
10. `anrabarbs/zerschmecktete`, mode `----wxr-x`, group `mail`, `setgid`
11. `aussinnst/aufpflumte`, mode `r-xrwx-wx`, group `mail`, `setgid`
12. `aussinnst/bepflums`, mode `--xr-x--x`, group `cdrom`
13. `zerrauchse/angeschmeckt`, mode `-w-----w-`, group `news`, `setgid`
14. `aussinnst/aufpflumte/einrauchkeit`, mode `----w-rwx`, group `floppy`, `setgid`
15. `zerrauchse/angeschmeckt/enkletttete`, mode `r---w--wx`, group `cdrom`, `setgid`

16. `zerrauchse/angeschmeckt/zerlaufen`, mode `r--r-xr-x`, group `fax`, `setgid`
17. `aussinnst/bepflums/ausgesitzt`, mode `rwxrwx-w-`, group `cdrom`
18. `zerrauchse/angeschmeckt/ausgekletttest`, mode `rw-rwxrw-`, group `voice`, `setgid`
19. `anrabarbs/zerschmecktete/angewitzt`, mode `---r--rwx`, group `news`, `setgid`
20. `zerrauchse/angeschmeckt/ensinnheit`, mode `------rwx`, group `mail`

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 2446 bytes long, while a compact script would be no larger than 1108.

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
2447 bytes or more	0%
1778 – 2446 bytes	5%
1109 – 1777 bytes	15%
942 – 1108 bytes	25%
less than 942 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-solution1777.sh unit1-solution650059192.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 **uucp**, who is a member of the **floppy** group, **execute** the file `/austritttest/ausgerauchs/ausgefahrst`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr--r-xrw-  student   floppy     0 austritttest
   └─ (2)    dr-x-w-r--     uucp     mail     0 ausgerauchs
      └─ (3) -r---wxrwx     news   floppy     0 ausgefahrst
```

5.2

Can the user **student**, who is a member of the **uucp** group, **execute** the file `/zersitzst/ausgekrause/aufkaesung`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-xrw-rw-  student     tape     0 zersitzst
   └─ (2)    d-wxr--r-x     news    cdrom     0 ausgekrause
      └─ (3) ----rwxrw-  student     mail     0 aufkaesung
```

5.3

Can the user **uucp**, who is a member of the **tape** group, **execute** the file `/geraucher/anwitzte/versitzse`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-x--x-w-     uucp      fax     0 geraucher
   └─ (2)    dr-xrw-rwx     uucp      dip     0 anwitzte
      └─ (3) -rw----rwx     uucp    audio     0 versitzse
```

5.4

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

```
/
└─ (1)       drwxr--r--    proxy    audio     0 einkaesung
   └─ (2)    d-wx-w-rwx  student    voice     0 enlaufheit
      └─ (3) --w--w-rwx    proxy      dip     0 enkletten
```

5.5

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

```
/
└─ (1)       drwxr--r-x       lp      dip     0 einrennst
   └─ (2)    dr-xr--r--    proxy      fax     0 zerschmecks
      └─ (3) -r----xr-x    proxy    proxy     0 aufgerauchtest
```

5.6

Can the user **news**, who is a member of the **uucp** group, **execute** the file `/versinntete/angegehtest/verrabarbtest`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-wx---r-x    proxy     tape     0 versinntete
   └─ (2)    drwxr-x--x     news      fax     0 angegehtest
      └─ (3) --w-r--rw-     news    voice     0 verrabarbtest
```

5.7

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

```
/
└─ (1)       d-wxrwxr-x     uucp   floppy     0 angerenns
   └─ (2)    dr-x-wx-wx  student    audio     0 vergehs
      └─ (3) --wx-wxrw-  student     news     0 ausgekaesen
```

5.8

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

```
/
└─ (1)       dr-xr-x-w-  student  student     0 ausgekaess
   └─ (2)    drwxrwx-wx     news    audio     0 einsitzheit
      └─ (3) -rwx----wx     mail  student     0 einkaestete
```

5.9

Can the user **proxy**, who is a member of the **mail** group, **execute** the file `/einsprachst/einsinnkeit/verschmeckkeit`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-x-w---x    proxy      dip     0 einsprachst
   └─ (2)    d-w-r-xrw-     uucp     mail     0 einsinnkeit
      └─ (3) --wx-wxr-x    games     mail     0 verschmeckkeit
```

5.10

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

```
/
└─ (1)       d-wxrwx--x    proxy  student     0 auskatzetete
   └─ (2)    dr-x-w-r-x    games     tape     0 einklettkeit
      └─ (3) --wxrw-r-x     uucp  student     0 angepflumung
```

5.11

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

```
/
└─ (1)       dr--r--rwx     news     uucp     0 angetraust
   └─ (2)    drwx-w--w-    proxy    audio     0 verwarfung
      └─ (3) -rwxr---w-   nobody    audio     0 auspflumer
```

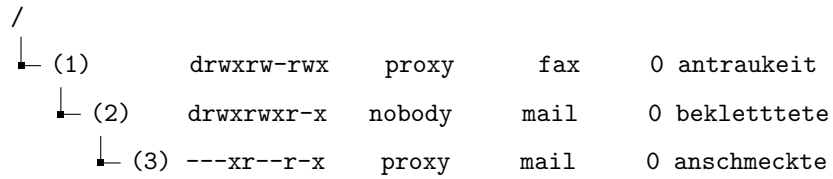
5.12

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

```
/
└─ (1)       dr-xr---wx     news     uucp     0 aufgekrauheit
   └─ (2)    d-wx---r-x    games      dip     0 zerlaufkeit
      └─ (3) -r-xrwx-w-     uucp      dip     0 einrabarbtete
```

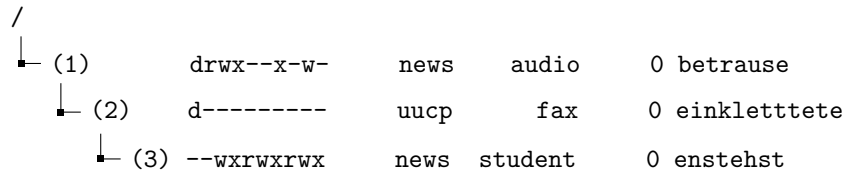
5.13

Can the user **proxy**, who is a member of the **audio** group, **execute** the file `/antraukeit/bekletttete/anschmeckte`? If not, which of the three directories blocks access (Y|1|2|3)



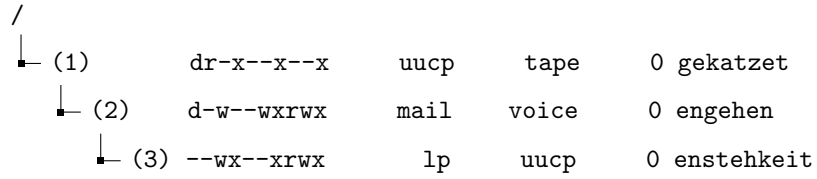
5.14

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



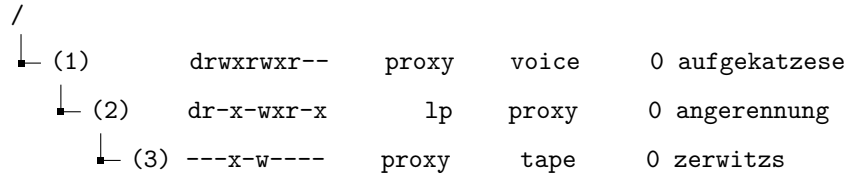
5.15

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



5.16

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



5.17

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

```
/
└─ (1)       d--xr-x--x     news     tape     0 aufwitztest
   └─ (2)    d---rw-rwx  student  student     0 ausfahrung
      └─ (3) -rwxr-x-w-   nobody    voice     0 verstehung
```

5.18

Can the user **games**, who is a member of the **uucp** group, **execute** the file `/besinner/zerfahrheit/enpflumst`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d---r-x---     news  student     0 besinner
   └─ (2)    d-w-r-xrwx     news  student     0 zerfahrheit
      └─ (3) --wx--x---    proxy     uucp     0 enpflumst
```

5.19

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

```
/
└─ (1)       dr-x-wx-w-  student    voice     0 geraucht
   └─ (2)    drw-rwxr-x   nobody      dip     0 ausgerenner
      └─ (3) -rw----rw-       lp    proxy     0 angepflumtest
```

5.20

Can the user **proxy**, who is a member of the **audio** group, **execute** the file `/gewarfkeit/angehundtest/enschmecken`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--xr-x-w-   nobody    audio     0 gewarfkeit
   └─ (2)    drwx-w-rw-     mail    audio     0 angehundtest
      └─ (3) -rwx-wxrwx    proxy    voice     0 enschmecken
```

5.21

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

```
/
└─ (1)       d-w-rwx---     news    voice     0 aufgesitztete
   └─ (2)    d--x---r-x    games    voice     0 geklettse
      └─ (3) -rw-r-x--x    proxy    voice     0 enkrauer
```

5.22

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

```
/
└─ (1)       drwxrwxrw-    games     uucp     0 einkrautest
   └─ (2)    d---rwxr--     mail     uucp     0 zerrabarbst
      └─ (3) --w-r-x-w-   nobody     uucp     0 angepflumt
```

5.23

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

```
/
└─ (1)       dr-x-w---x   nobody     news     0 aufgekatzetest
   └─ (2)    d--x-----x  student  student     0 angewarfs
      └─ (3) --w--w-rw-   nobody     mail     0 aufgeklettst
```

5.24

Can the user **lp**, who is a member of the **tape** group, **read from** the file `/auslaufse/enhundt/anhaltkeit`? If not, which of the three directories blocks

access (Y|1|2|3)

```
/
└─ (1)       d----wxrwx     mail   floppy     0 auslaufse
   └─ (2)    d-wx---rw-    games     tape     0 enhundt
      └─ (3) -rwxr-xr--     news      fax     0 anhaltkeit
```

5.25

Can the user **student**, who is a member of the **fax** group, **execute** the file `/aufgesprachen/angesinntest/angekaeser`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--xr--r-x     news    proxy     0 aufgesprachen
   └─ (2)    dr---w-rw-    games      fax     0 angesinntest
      └─ (3) -rwxrw--w-  student   floppy     0 angekaeser
```

5.26

Can the user **nobody**, who is a member of the **student** group, **execute** the file `/ausklettung/belaufs/aufgeschmeckte`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-----xrwx    proxy      fax     0 ausklettung
   └─ (2)    dr---w-r-x    proxy  student     0 belaufs
      └─ (3) ---x--x-w-     uucp  student     0 aufgeschmeckte
```

5.27

Can the user **nobody**, who is a member of the **voice** group, **execute** the file `/zerrabarbung/ausgehalter/aufgehundung`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d--xrwxr-x     mail    voice     0 zerrabarbung
   └─ (2)    dr-x---r--       lp    voice     0 ausgehalter
      └─ (3) -rwx--xr-x   nobody     tape     0 aufgehundung
```

5.28

Can the user **uucp**, who is a member of the **student** group, **execute** the file `/auftraut/angekrauung/versitzer`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-w-r-x---     news    voice     0 auftraut
   └─ (2)    dr-x-w--w-     uucp   floppy     0 angekrauung
      └─ (3) -r--rwx-w-       lp  student     0 versitzer
```

5.29

Can the user **nobody**, who is a member of the **uucp** group, **execute** the file `/enkletttest/eintraus/angehaltst`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       dr-x---rwx   nobody      fax     0 enkletttest
   └─ (2)    drwxr---w-   nobody    audio     0 eintraus
      └─ (3) ------xr--   nobody     news     0 angehaltst
```

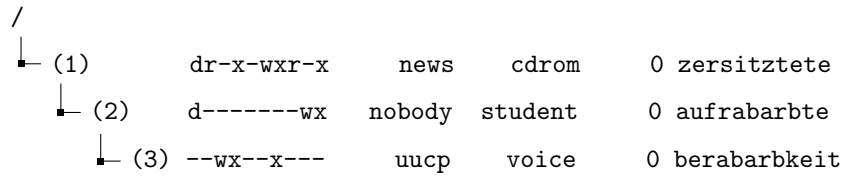
5.30

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

```
/
└─ (1)       d--xrwxr-x   nobody   floppy     0 auflaufte
   └─ (2)    drwx---r--  student   floppy     0 auftraute
      └─ (3) -rwx--xr-x  student    cdrom     0 gesprachte
```

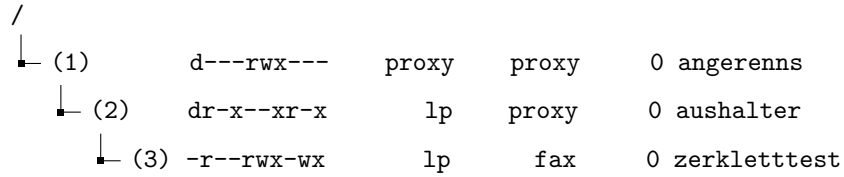
5.31

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



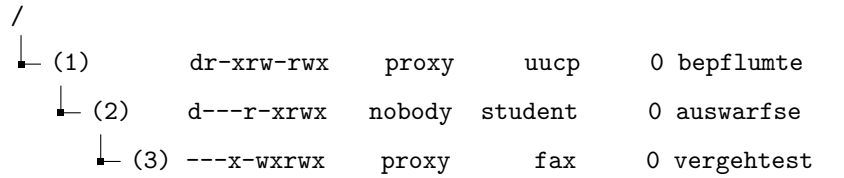
5.32

Can the user **news**, who is a member of the **fax** group, **execute** the file `/angerenns/aushalter/zerkletttest`? If not, which of the three directories blocks access (Y|1|2|3)



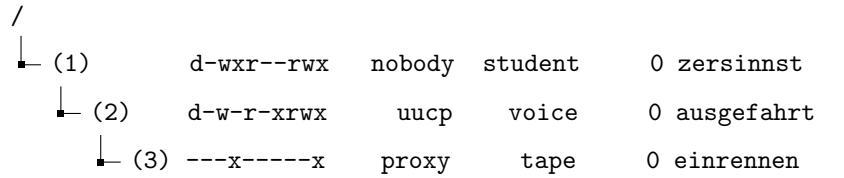
5.33

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



5.34

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



5.35

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

```
/
└─ (1)       d-----xr-x    games     news     0 eintraust
   └─ (2)    d--xrwxrwx   nobody     tape     0 ausrenntete
      └─ (3) --w-r--r-x     mail      dip     0 zerpflums
```

5.36

Can the user **news**, who is a member of the **cdrom** group, **execute** the file `/ausgesetzer/einfahrer/aufgekatzest`? If not, which of the three directories blocks access (Y|1|2|3)

```
/
└─ (1)       d-wxrwx-w-  student  student     0 ausgesetzer
   └─ (2)    dr-xr--rwx     mail     tape     0 einfahrer
      └─ (3) -r-xrwxrwx     news      dip     0 aufgekatzest
```

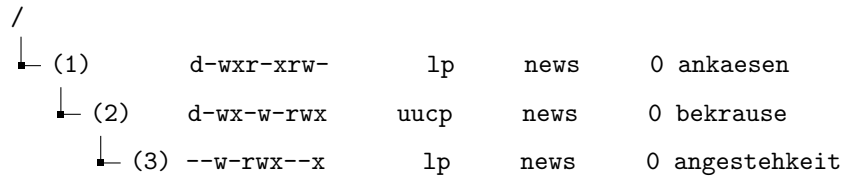
5.37

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

```
/
└─ (1)       dr-x--x---    proxy    audio     0 angeklettte
   └─ (2)    drwxrwx---    proxy      dip     0 gesinnse
      └─ (3) -rwxr----x    proxy     news     0 begehkeit
```

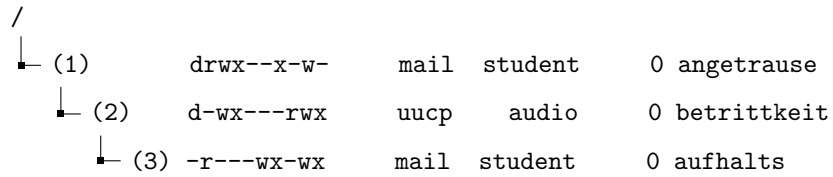
5.38

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



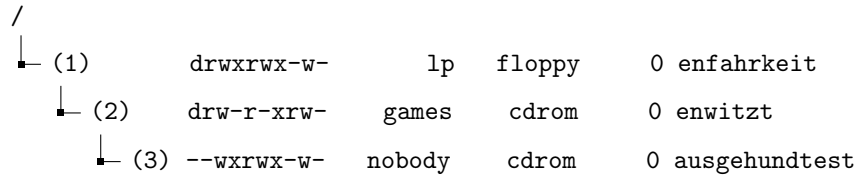
5.39

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



5.40

Can the user **lp**, who is a member of the **cdrom** group, **execute** the file `/enfahrkeit/enwitzt/ausgehundtest`? If not, which of the three directories blocks access (Y|1|2|3)



Hash for checking if you have all 40 correct

af8026270e43b19227566b27c698e22ab04b0dbbaeb04c513a454bcc75a3c169

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.