

5. (20 pts)

Suppose in a Unix system, in addition to (superuser) `root`, we have users `longpre`, `vladik` and `arturo`. The group `wheel` contains only `root`, and the group `instructor` contains `longpre` and `vladik`.

Here is a list of files from a directory.

```
drwxrw-r-x  4 cs5352  instructor  1024 Mar 15 12:23 .
drwxr----x 37 longpre  wheel      1024 Mar 15 10:20 ..
-r-----r-- 1 longpre  instructor  1536 Mar 14 18:23 test1
-rw---x--x  1 longpre  instructor  5058 Mar 14 14:35 prog
-r--r----x  1 longpre  instructor   630 Mar  6 13:46 syl.tex
```

The grandparent directory has permissions: `dr-xr-xr-x`.

Fill the matrix below with the letters *l*, *d*, *x* as to whether the users can list the file (read), delete the file, and execute the file, respectively.

	test1	prog	syl.tex
longpre			
vladik			
arturo			
root			

Which user(s) can create a new file in the listed directory?

Which user(s) can list the set of files in the listed directory?