

# HW 1

Fill in your name

17 JAN 2018

1. (10 points) What are the three components of a Unix system? Provide an example of the interaction from a user perspective down to the hardware and back up.

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2. (15 points) Consider the `ls -l` output below, label the output appropriately:

```
drwxr-xr-x 2 aviv scs 4096 2013-12-22 10:57 demo/  
-rw-r--r-- 1 aviv scs 13454 2013-12-22 10:56 text.dat
```

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3. (15 points) For the following commands, determine in which bin directory they live by using which command on a lab machine

(a) `ls`

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(b) `which`

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(c) `tac`

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(d) `grep`

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(e) `cut`

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(f) `chmod`

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(g) `head`

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(h) `mv`

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4. (10 points) Look up the `tac` command in the man pages. Describe its operations, and give an example usage.

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5. (15 points) What are the three guiding principles of the Unix design philosophy?

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6. (10 points) What are the primary purpose of standard input, output, and error for different programs?

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7. (15 points) Consider the following command line with redirects:

```
grep PA < sample-db.csv 2> oops > sample-db.PA.csv
```

- (a) What is the output file?

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- (b) What is the input file?

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- (c) What is the error file?

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- (d) What is the error file?

8. (10 points) Using a pipeline as an example, why is it necessary to have standard error and standard output?

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