



CS 200/201 midterm review

2/24/19

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Resources available to you as you prepare

- [course website](#)
 - [lecture notes](#)
 - [UNIX introduction](#)
- [past psets](#)
- past exams
 - spring 2015 [exam](#) / [solutions](#)
 - UNIX [transcript](#) / [solutions](#)
 - some other (perhaps less relevant) examples [here](#)
- [Racket guide](#)
- UNIX tutorial (more info in the following section)
 - ssh into the Zoo; then in your home folder, type the following command: `python3 /c/cs201/www/unixtutorial.py`
- [Piazza](#)
- cs201help@cs.yale.edu (automatically emails Professor Slade, the TF, and the ULAs)
- each other!
- [office hours](#)

Agenda

1. Reviewing resources
- 2. How to get better at UNIX + some practice scenarios**
3. `cons` vs. `append`
4. Deep recursion (review `lambda` functions)
5. Boolean functions
6. Turing machines
7. Time permitting: more questions!

How can I get better at UNIX?

1) UNIX tutorial on the Zoo! ssh into the Zoo; then in your home folder, type the following command: `python3 /c/cs201/www/unixtutorial.py`



2) Practice typing commands on the Zoo

General tips:

- Be familiar with the *output* of each command (important in context of the transcript!)

A few scenarios

scenario 1

```
[[jlv34@peacock midterm1_prep]$ pwd
/home/accts/jlv34/midterm1_prep
[[jlv34@peacock midterm1_prep]$ ls -l
total 12
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 22 20:16 test1
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 22 20:16 test2
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 22 20:16 test3
[[jlv34@peacock midterm1_prep]$ 
[[jlv34@peacock test2]$ pwd
/home/accts/jlv34/midterm1_prep/test2
[[jlv34@peacock test2]$ 
[[jlv34@peacock midterm1_prep]$ pwd
/home/accts/jlv34/midterm1_prep_
```

scenario 1

```
[[jlv34@peacock midterm1_prep]$ pwd
/home/accts/jlv34/midterm1_prep
[[jlv34@peacock midterm1_prep]$ ls -l
total 12
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 22 20:16 test1
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 22 20:16 test2
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 22 20:16 test3
[[jlv34@peacock midterm1_prep]$ cd test2
[[jlv34@peacock test2]$ pwd
/home/accts/jlv34/midterm1_prep/test2
[[jlv34@peacock test2]$ cd ..
[[jlv34@peacock midterm1_prep]$ pwd
/home/accts/jlv34/midterm1_prep_
```

scenario 2

```
[[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file3
[[jlv34@peacock test2]$ XXXXXXXXXX
[[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file3
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file4
```


scenario 2

```
[[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file3
[[jlv34@peacock test2]$ touch file4
[[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file3
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file4
```

scenario 3

```
[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file3
[jlv34@peacock test2]$ XXXXXXXXXX
[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file3
-rw-rw-r-- 1 jlv34 jlv34 29 Feb 22 21:06 file4
[jlv34@peacock test2]$ cat file4
Fri Feb 22 21:06:18 EST 2019
[jlv34@peacock test2]$ █
```

scenario 3

```
[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file3
[jlv34@peacock test2]$ date > file4
[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:25 file3
-rw-rw-r-- 1 jlv34 jlv34 29 Feb 22 21:06 file4
[jlv34@peacock test2]$ cat file4
Fri Feb 22 21:06:18 EST 2019
[jlv34@peacock test2]$ █
```

scenario 4

```
[[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file3
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file4
[[jlv34@peacock test2]$ ██████████
[[jlv34@peacock test2]$ ls
[[jlv34@peacock test2]$ █
```

scenario 4

```
[[jlv34@peacock test2]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file1
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file2
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file3
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:21 file4
[[jlv34@peacock test2]$ rm *
[[jlv34@peacock test2]$ ls
[[jlv34@peacock test2]$ █
```

scenario 5

```
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 file.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 file.txt
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[[jlv34@peacock test1]]$ ██████████
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[[jlv34@peacock test1]]$ █
```

scenario 5

```
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 file.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 file.txt
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[[jlv34@peacock test1]]$ rm file.*
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[[jlv34@peacock test1]]$ █
```

scenario 6

```
[jlv34@peacock test1]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:35 file.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:35 file.txt
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[jlv34@peacock test1]$ ██████████
[jlv34@peacock test1]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:35 file.txt
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[jlv34@peacock test1]$ █
```


scenario 6

```
[jlv34@peacock test1]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:35 file.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:35 file.txt
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.pdf
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[jlv34@peacock test1]$ rm *.pdf
[jlv34@peacock test1]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:35 file.txt
-rw-rw-r-- 1 jlv34 jlv34 0 Feb 22 20:33 hello.txt
[jlv34@peacock test1]$ █
```

scenario 7

```
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 foo
[[jlv34@peacock test1]]$ cat foo
hello, world
[[jlv34@peacock test1]]$ ██████████
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 21:08 bar
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 foo
[[jlv34@peacock test1]]$ cat bar
hello, world
[[jlv34@peacock test1]]$ █
```

scenario 7

```
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 foo
[[jlv34@peacock test1]]$ cat foo
hello, world
[[jlv34@peacock test1]]$ cp foo bar
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 21:08 bar
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 foo
[[jlv34@peacock test1]]$ cat bar
hello, world
[[jlv34@peacock test1]]$ █
```

scenario 8

```
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 foo
[[jlv34@peacock test1]]$ cat foo
hello, world
[[jlv34@peacock test1]]$ XXXXXXXXXX
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 bar
[[jlv34@peacock test1]]$ cat bar
hello, world
[[jlv34@peacock test1]]$ █
```

scenario 8

```
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 foo
[[jlv34@peacock test1]]$ cat foo
hello, world
[[jlv34@peacock test1]]$ mv foo bar
[[jlv34@peacock test1]]$ ls -l
total 0
-rw-rw-r-- 1 jlv34 jlv34 13 Feb 22 20:40 bar
[[jlv34@peacock test1]]$ cat bar
hello, world
[[jlv34@peacock test1]]$ █
```

scenario 9

```
[[jlv34@peacock test4]$ ls -l
total 1200
-rw-rw-r-- 1 jlv34 jlv34 1220147 Feb 22 20:53 entire_moby_dick_book
```

```
[[jlv34@peacock test4]$ wc entire_moby_dick_book
 22930  212044 1220147 entire_moby_dick_book
```

```
[[jlv34@peacock test4]$ █
MOBY DICK; OR THE WHALE
```

by Herman Melville

ETYMOLOGY.

(Supplied by a Late Consumptive Usher to a Grammar School)

The pale Usher--threadbare in coat, heart, body, and brain; I see him now. He was ever dusting his old lexicons and grammars, with a queer

```
[[jlv34@peacock test4]$ █
```

scenario 9

```
[[jlv34@peacock test4]$ ls -l
total 1200
-rw-rw-r-- 1 jlv34 jlv34 1220147 Feb 22 20:53 entire_moby_dick_book
[[jlv34@peacock test4]$ wc entire_moby_dick_book
  22930  212044 1220147 entire_moby_dick_book
[[jlv34@peacock test4]$ head entire_moby_dick_book
MOBY DICK; OR THE WHALE
```




by Herman Melville

ETYMOLOGY.

(Supplied by a Late Consumptive Usher to a Grammar School)

The pale Usher--threadbare in coat, heart, body, and brain; I see him now. He was ever dusting his old lexicons and grammars, with a queer
[[jlv34@peacock test4]\$ █

scenario 10

```
[[jlv34@peacock test4]$ pwd
/home/accts/jlv34/midterm1_prep/test4
[[jlv34@peacock test4]$ ls -l
total 1200
-rw-rw-r-- 1 jlv34 jlv34 1220147 Feb 22 20:53 entire_moby_dick_book
[[jlv34@peacock test4]$ 
[[jlv34@peacock test4]$ 
[[jlv34@peacock test5]$ pwd
/home/accts/jlv34/midterm1_prep/test4/test5
[[jlv34@peacock test5]$ 
```


scenario 10

```
[[jlv34@peacock test4]$ pwd
/home/accts/jlv34/midterm1_prep/test4
[[jlv34@peacock test4]$ ls -l
total 1200
-rw-rw-r-- 1 jlv34 jlv34 1220147 Feb 22 20:53 entire_moby_dick_book
[[jlv34@peacock test4]$ mkdir test5
[[jlv34@peacock test4]$ cd test5
[[jlv34@peacock test5]$ pwd
/home/accts/jlv34/midterm1_prep/test4/test5
[[jlv34@peacock test5]$ █
```

scenario 11

```
[[jlv34@zebra test1]]$ pwd
/home/accts/jlv34/midterm1_prep/test1
[[jlv34@zebra test1]]$ ls -l
total 4
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 23 17:16 test2
[[jlv34@zebra test1]]$ cd test2
[[jlv34@zebra test2]]$ echo "hello world" > file
[[jlv34@zebra test2]]$ cd ..
[[jlv34@zebra test1]]$ █
[[jlv34@zebra test1]]$ ls -l
total 4
-rw-rw-r-- 1 jlv34 jlv34 12 Feb 23 17:17 file
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 23 17:17 test2
[[jlv34@zebra test1]]$ cat file
hello world
[[jlv34@zebra test1]]$ █
```

scenario 11

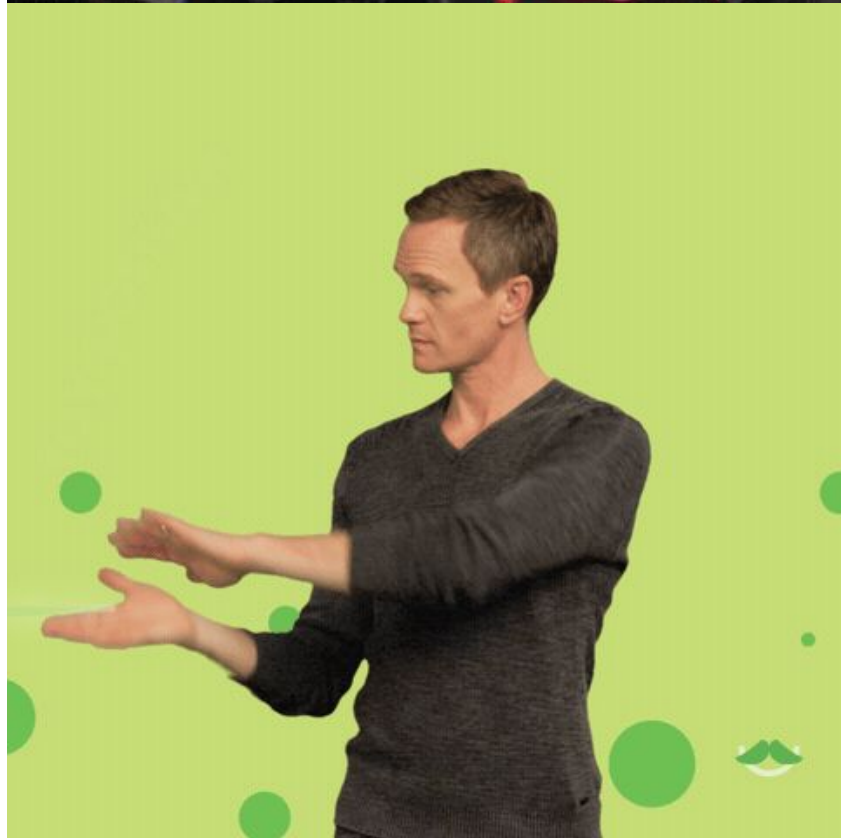
```
[[jlv34@zebra test1]]$ pwd
/home/accts/jlv34/midterm1_prep/test1
[[jlv34@zebra test1]]$ ls -l
total 4
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 23 17:16 test2
[[jlv34@zebra test1]]$ cd test2
[[jlv34@zebra test2]]$ echo "hello world" > file
[[jlv34@zebra test2]]$ cd ..
[[jlv34@zebra test1]]$ cp test2/file .
[[jlv34@zebra test1]]$ ls -l
total 4
-rw-rw-r-- 1 jlv34 jlv34  12 Feb 23 17:17 file
drwxrwxr-x 2 jlv34 jlv34 4096 Feb 23 17:17 test2
[[jlv34@zebra test1]]$ cat file
hello world
[[jlv34@zebra test1]]$ █
```



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YOU



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YOU'RE DOING A GREAT JOB!

