

## Using Linux

This week you will learn to use Linux to solve technical problems common in software engineering, data engineering and machine learning. You will explore the key parts of the Linux shell, and learn how to implement your knowledge in common scenarios.

### Learning Objectives

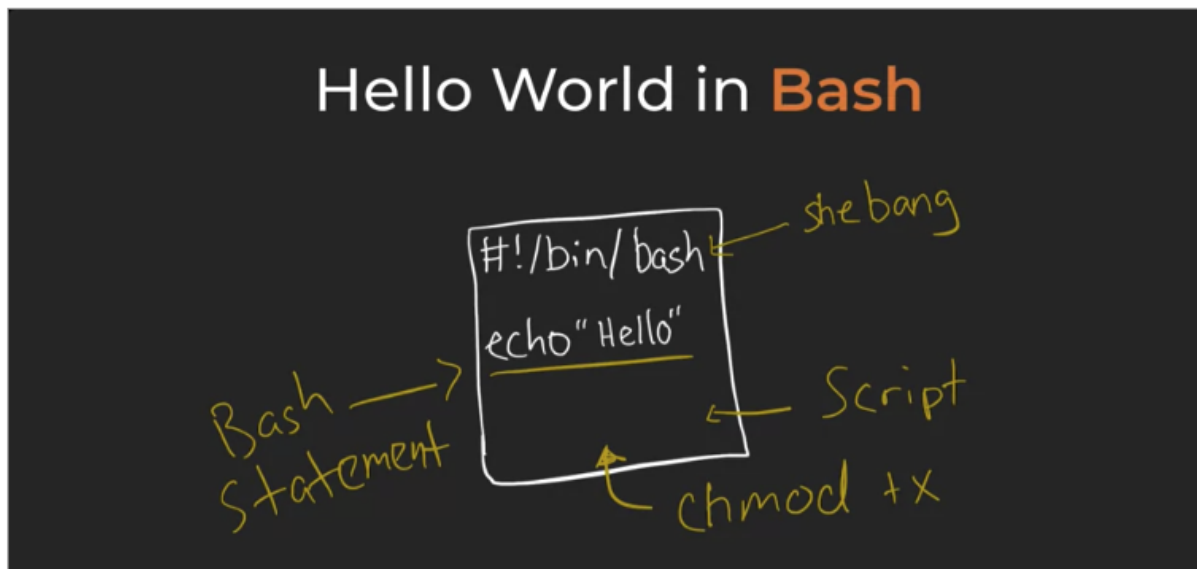
---

- Identify key components of the Linux shell.
- Create shell pipelines.
- Define SSH (Secure Shell Protocol).
- Explain how to use SSH to solve problems.

### “Hello World” Bash Script

## Writing 'Hello World' Bash Script

[Notes](#) [Discuss](#)



## Practicing Common Linux Shell Commands : LAB

Coursera-DE-C2-Using-Linux

An exploration of the Linux Shell

Goal: Learn the basics of Linux Shell

Let's practice some common shell commands

Part 1: Navigate the file system

Create a directory foo via mkdir foo command

cd into the foo directory

Part 2: Create a file with touch

Create a file using touch newfile.txt

Run the command again? What happens?

Part 3: Remove files and directories

Remove the directory foo via the command rm -rf foo

Make a file and then delete it: touch bar.txt then run rm bar.txt

Part 4: List files

list the contents of /usr/bin by running the command ls -l /usr/bin

What did you see?

```
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux/foo$ touch
newfile.txt
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux/foo$ touch
newfile.txt
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux/foo$ rm -rf foo
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux/foo$ pwd
/home/coder/project/Coursera-DE-C2-Using-Linux/foo
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux/foo$ cd ..
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux$ ls
foo  README.md
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux$ rm -rf foo/
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux$ ls
README.md
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux$ touch bar.txt
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux$ rm bar.txt
coder@c2634dae7485:~/project/Coursera-DE-C2-Using-Linux$ ls -l /usr/bin/
```

```
total 103274
-rwxr-xr-x 1 root root      59736 Sep  5  2019 '['
-rwxr-xr-x 1 root root        96 Mar  8  2021 2to3-2.7
-rwxr-xr-x 1 root root      30952 Jul 21  2020 addpart
```

## Practicing Common Shell Piping Operations : Lab

# Coursera-DE-C2-Shell-Piping  
Learn to pipe in the shell

An exploration of the Linux Shell

## Goal: Learn the basics of shell piping

Let's practice some common shell piping operations

### Part 1: Count the files and directories in /usr/bin

1. Pipe the output of `ls -l /usr/bin | wc -l` to count the files and directories in `/usr/bin`
2. How many did you count?

### Part 2: Create a new file with echo a

1. Run the following command `echo 'hi'`
2. Pipe this to a file by using `echo 'hi' > hello.txt`
3. Now run `ls` to verify it exists
4. count the words in the file `cat hello.txt | wc -w`
5. How many did you count?

```
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ pwd
/home/coder/project/Coursera-DE-C2-Shell-Piping
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ ls
LICENSE  README.md
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ ls -l
total 12
-rwxrwxrwx 1 coder coder 7048 Dec 23  2021 LICENSE
-rwxrwxrwx 1 coder coder  638 Dec 23  2021 README.md
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ ls -l /usr/bin/ |
```

```
wc -l
901
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ echo "hi"
hi
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ echo "hi" >
hello.txt
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ cat hello.txt
hi
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ ls -l
total 16
-rw-r--r-- 1 coder coder   3 Sep 12 19:45 hello.txt
-rwxrwxrwx 1 coder coder 7048 Dec 23  2021 LICENSE
-rwxrwxrwx 1 coder coder  638 Dec 23  2021 README.md
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ cat hello.txt |
ws -l
bash: ws: command not found
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ cat hello.txt |
wc -l
1
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ cat hello.txt |
wc -w
1
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ cat hello.txt |
wc -c
3
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ echo "hello
clarice" >> hello.txt
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ cat hello.txt |
wc -c
17
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$ cat hello.txt |
wc -l
2
coder@0a575a0aa53b:~/project/Coursera-DE-C2-Shell-Piping$
```

## Creating a Shell Pipeline

# coursera-de-c2-lab1-linux  
Using Linux Lab

## Goal: Truncate file with Bash

For this project you will create a shell pipeline that truncates a file via random shuffling, then verifies the correct number of lines. Many times large files are so big that traditional data science libraries like `pandas` or `jupyter` cannot process them. One approach to dealing with this problem is to sample the file by truncating and shuffling the results.

### Part 1: Count the lines in the file and inspect the contents

1. Run `wc -l nba\_2017.csv`
2. How many lines are in the file?
3. Run the `head nba\_2017.csv` and inspect the first few rows of the file.

### Part 2: Truncate and shuffle the file

1. Truncate and shuffle the file `shuf -n 100 nba\_2017.csv > small\_nba\_2017.csv`
2. Count the number of lines. How many are there?
3. If you inspect the first few lines what do you see? `head small\_nba\_2017.csv`

### Part 3: Remove Column Names Before Shuffle

1. What happens when you run `tail -n +2 nba\_2017.csv | head`?
2. How could use this approach to remove the column heads before shuffling?
3. Why would want to do this and how could you append them back on after you shuffle?

```
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ wc -l nba_2017.csv
240 nba_2017.csv
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ head nba_2017.csv
,Rk,PLAYER,POSITION,AGE,MP,FG,FGA,FG%,3P,3PA,3P%,2P,2PA,2P%,eFG%,FT,FTA,FT%
,ORB,DRB,TRB,AST,STL,BLK,TOV,PF,POINTS,TEAM,GP,MPG,ORPM,DRPM,RPM,WINS_RPM,P
IE,PACE,W,SALARY_MILLIONS,PAGEVIEWS,TWITTER_FAVORITE_COUNT,TWITTER_RETWEET_
COUNT
0,1,Russell
Westbrook,PG,28,34.6,10.2,24.0,0.425,2.5,7.2,0.34299999999999997,7.7,16.8,0
.45899999999999996,0.47600000000000003,8.8,10.4,0.845,1.7,9.0,10.7,10.4,1.6
,0.4,5.4,2.3,31.6,OKC,81,34.6,6.74,-0.47,6.27,17.34,23.0,102.31,46,26.5,427
9.0,2130.5,559.0
```

```
1,2,James
Harden,PG,27,36.4,8.3,18.9,0.44,3.2,9.3,0.34700000000000003,5.1,9.6,0.53,0.
525,9.2,10.9,0.847,1.2,7.0,8.1,11.2,1.5,0.5,5.7,2.7,29.1,HOU,81,36.4,6.38,-
1.57,4.81,15.54,19.0,102.98,54,26.5,3279.0,969.0,321.5
2,4,Anthony
Davis,C,23,36.1,10.3,20.3,0.505,0.5,1.8,0.299,9.7,18.6,0.524,0.518,6.9,8.6,
0.802,2.3,9.5,11.8,2.1,1.3,2.2,2.4,2.2,28.0,NO,75,36.1,0.45,3.9,4.35,12.81,
19.2,100.19,31,22.12,82.5,368.0,104.0
3,6,DeMarcus
Cousins,C,26,34.2,9.0,19.9,0.452,1.8,5.0,0.361,7.2,14.8,0.483,0.498,7.2,9.3
,0.772,2.1,8.9,11.0,4.6,1.4,1.3,3.7,3.9,27.0,NO/SAC,72,34.2,3.56,0.64,4.2,1
1.26,17.8,97.11,30,16.96,1625.5,102.0,91.5
4,7,Damian
Lillard,PG,26,35.9,8.8,19.8,0.444,2.9,7.7,0.37,6.0,12.1,0.49200000000000005
,0.516,6.5,7.3,0.895,0.6,4.3,4.9,5.9,0.9,0.3,2.6,2.0,27.0,POR,75,35.9,4.63,
-1.49,3.14,10.72,15.9,99.68,38,24.33,1830.5,186.5,43.0
5,8,LeBron
James,SF,32,37.8,9.9,18.2,0.5479999999999999,1.7,4.6,0.363,8.3,13.5,0.611,0
.594,4.8,7.2,0.674,1.3,7.3,8.6,8.7,1.2,0.6,4.1,1.8,26.4,CLE,74,37.8,6.49,1.
93,8.42,20.43,18.3,98.38,51,30.96,14704.0,5533.5,1501.5
6,9,Kawhi
Leonard,SF,25,33.4,8.6,17.7,0.485,2.0,5.2,0.38,6.6,12.5,0.529,0.541,6.3,7.2
,0.88,1.1,4.7,5.8,3.5,1.8,0.7,2.1,1.6,25.5,SA,74,33.4,5.83,1.25,7.08,15.53,
17.4,95.79,54,17.64,2446.5,2701.5,716.5
7,10,Stephen
Curry,PG,28,33.4,8.5,18.3,0.46799999999999997,4.1,10.0,0.41100000000000003,
4.4,8.3,0.537,0.58,4.1,4.6,0.898,0.8,3.7,4.5,6.6,1.8,0.2,3.0,2.3,25.3,GS,79
,33.4,7.27,0.14,7.41,18.8,15.1,105.08,65,12.11,17570.5,12278.0,2893.0
8,11,Kyrie
Irving,PG,24,35.1,9.3,19.7,0.473,2.5,6.1,0.401,6.9,13.6,0.505,0.535,4.1,4.6
,0.905,0.7,2.5,3.2,5.8,1.2,0.3,2.5,2.2,25.2,CLE,72,35.1,4.35,-2.3,2.05,8.28
,13.5,99.12,47,17.64,4796.0,1541.0,695.0
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ shuf -n 100
nba_2017.csv > small_nba_2017.csv
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ wc -l
small_nba_2017.csv
100 small_nba_2017.csv
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ head
small_nba_2017.csv
153,244,Bobby
Portis,PF,21,15.6,2.9,5.9,0.488,0.5,1.5,0.33299999999999996,2.4,4.4,0.541,0
.531,0.6,0.9,0.6609999999999999,1.2,3.5,4.6,0.5,0.3,0.2,0.6,1.5,6.8,CHI,64,
15.6,-1.94,-0.5,-2.44,0.43,11.0,97.38,30,1.52,193.0,37.0,73.0
```

```
136,205,Alex
Len,C,23,20.3,3.0,6.0,0.4970000000000005,0.0,0.2,0.25,2.9,5.9,0.503,0.5,1.
9,2.7,0.721,2.0,4.6,6.6,0.6,0.5,1.3,1.3,3.1,8.0,PHX,77,20.3,-3.62,1.28,-2.3
4,0.81,9.5,103.52,21,4.82,270.0,10.5,6.0
80,113,Steven
Adams,C,23,29.9,4.7,8.2,0.5710000000000001,0.0,0.0,0.0,4.7,8.2,0.5720000000
000001,0.5710000000000001,2.0,3.2,0.611,3.5,4.2,7.7,1.1,1.1,1.0,1.8,2.4,11.
3,OKC,80,29.9,-0.3,1.68,1.38,7.01,9.7,101.16,47,3.14,1132.0,36.0,99.0
224,425,Andrew
Nicholson,PF,27,9.0,1.1,2.9,0.387,0.1,0.7,0.185,1.0,2.2,0.452,0.41,0.2,0.4,
0.643,0.4,1.2,1.6,0.3,0.4,0.2,0.4,1.4,2.6,BKN/WSH,38,9.0,-3.54,-0.67,-4.21,
-0.23,3.1,97.45,20,6.09,3.0,5.0,5.0
137,207,Langston
Galloway,PG,25,20.2,2.8,7.4,0.38,1.6,4.2,0.39,1.2,3.2,0.3670000000000005,0
.49,0.7,0.9,0.797,0.4,1.7,2.1,1.3,0.6,0.1,0.6,1.3,7.9,NO/SAC,74,20.2,0.1,-1
.65,-1.55,1.46,6.7,99.48,29,5.2,146.0,14.5,2.0
82,116,Jerryd
Bayless,PG,28,23.7,3.7,10.7,0.344,0.7,1.7,0.4,3.0,9.0,0.3329999999999996,0
.375,3.0,3.3,0.9,1.0,3.0,4.0,4.3,0.0,0.0,3.0,1.3,11.0,PHI,3,23.7,-2.23,-0.4
7,-2.7,0.02,9.7,97.84,1,9.42,188.0,2.0,5.0
164,267,Kyle
O'Quinn,C,26,15.6,2.7,5.2,0.521,0.0,0.2,0.11800000000000001,2.7,5.0,0.53799
9999999999,0.523,0.8,1.1,0.7709999999999999,2.0,3.6,5.6,1.5,0.5,1.3,1.0,2.
2,6.3,NY,79,15.6,-1.28,1.16,-0.12,2.31,13.2,97.82,29,3.92,152.0,0.0,7.0
170,280,JaVale
McGee,C,29,9.6,2.7,4.1,0.652,0.0,0.0,0.0,2.7,4.1,0.6579999999999999,0.652,0
.7,1.4,0.505,1.3,1.9,3.2,0.2,0.2,0.9,0.5,1.4,6.1,GS,77,9.6,0.83,0.11,0.94,2
.04,12.5,105.1,62,1.4,804.5,0.0,32.0
72,101,Aaron
Gordon,SF,21,28.7,4.9,10.8,0.4539999999999996,1.0,3.3,0.28800000000000003,
4.0,7.5,0.528,0.499,2.0,2.7,0.7190000000000001,1.5,3.6,5.1,1.9,0.8,0.5,1.1,
2.2,12.7,ORL,80,28.7,1.25,-0.78,0.47,5.32,8.8,99.7,29,4.35,666.0,42.5,16.0
174,292,Quincy
Acy,PF,26,14.7,1.8,4.5,0.41200000000000003,1.0,2.4,0.41100000000000003,0.9,
2.1,0.413,0.521,1.2,1.6,0.75,0.5,2.5,3.0,0.5,0.4,0.4,0.6,1.8,5.8,DAL/BKN,38
,14.7,-2.38,-0.21,-2.59,0.01,8.3,101.09,11,1.79,179.0,4.0,4.0
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ tail -n +2
nba_2017.csv | head?
bash: head?: command not found
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ tail -n +2
nba_2017.csv | head
0,1,Russell
Westbrook,PG,28,34.6,10.2,24.0,0.425,2.5,7.2,0.3429999999999997,7.7,16.8,0
```

.45899999999999996,0.47600000000000003,8.8,10.4,0.845,1.7,9.0,10.7,10.4,1.6  
,0.4,5.4,2.3,31.6,OKC,81,34.6,6.74,-0.47,6.27,17.34,23.0,102.31,46,26.5,427  
9.0,2130.5,559.0

1,2,James

Harden,PG,27,36.4,8.3,18.9,0.44,3.2,9.3,0.34700000000000003,5.1,9.6,0.53,0.  
525,9.2,10.9,0.847,1.2,7.0,8.1,11.2,1.5,0.5,5.7,2.7,29.1,HOU,81,36.4,6.38,-  
1.57,4.81,15.54,19.0,102.98,54,26.5,3279.0,969.0,321.5

2,4,Anthony

Davis,C,23,36.1,10.3,20.3,0.505,0.5,1.8,0.299,9.7,18.6,0.524,0.518,6.9,8.6,  
0.802,2.3,9.5,11.8,2.1,1.3,2.2,2.4,2.2,28.0,NO,75,36.1,0.45,3.9,4.35,12.81,  
19.2,100.19,31,22.12,82.5,368.0,104.0

3,6,DeMarcus

Cousins,C,26,34.2,9.0,19.9,0.452,1.8,5.0,0.361,7.2,14.8,0.483,0.498,7.2,9.3  
,0.772,2.1,8.9,11.0,4.6,1.4,1.3,3.7,3.9,27.0,NO/SAC,72,34.2,3.56,0.64,4.2,1  
1.26,17.8,97.11,30,16.96,1625.5,102.0,91.5

4,7,Damian

Lillard,PG,26,35.9,8.8,19.8,0.444,2.9,7.7,0.37,6.0,12.1,0.49200000000000005  
,0.516,6.5,7.3,0.895,0.6,4.3,4.9,5.9,0.9,0.3,2.6,2.0,27.0,POR,75,35.9,4.63,  
-1.49,3.14,10.72,15.9,99.68,38,24.33,1830.5,186.5,43.0

5,8,LeBron

James,SF,32,37.8,9.9,18.2,0.5479999999999999,1.7,4.6,0.363,8.3,13.5,0.611,0  
.594,4.8,7.2,0.674,1.3,7.3,8.6,8.7,1.2,0.6,4.1,1.8,26.4,CLE,74,37.8,6.49,1.  
93,8.42,20.43,18.3,98.38,51,30.96,14704.0,5533.5,1501.5

6,9,Kawhi

Leonard,SF,25,33.4,8.6,17.7,0.485,2.0,5.2,0.38,6.6,12.5,0.529,0.541,6.3,7.2  
,0.88,1.1,4.7,5.8,3.5,1.8,0.7,2.1,1.6,25.5,SA,74,33.4,5.83,1.25,7.08,15.53,  
17.4,95.79,54,17.64,2446.5,2701.5,716.5

7,10,Stephen

Curry,PG,28,33.4,8.5,18.3,0.46799999999999997,4.1,10.0,0.41100000000000003,  
4.4,8.3,0.537,0.58,4.1,4.6,0.898,0.8,3.7,4.5,6.6,1.8,0.2,3.0,2.3,25.3,GS,79  
,33.4,7.27,0.14,7.41,18.8,15.1,105.08,65,12.11,17570.5,12278.0,2893.0

8,11,Kyrie

Irving,PG,24,35.1,9.3,19.7,0.473,2.5,6.1,0.401,6.9,13.6,0.505,0.535,4.1,4.6  
,0.905,0.7,2.5,3.2,5.8,1.2,0.3,2.5,2.2,25.2,CLE,72,35.1,4.35,-2.3,2.05,8.28  
,13.5,99.12,47,17.64,4796.0,1541.0,695.0

9,12,Kevin

Durant,SF,28,33.4,8.9,16.5,0.537,1.9,5.0,0.375,7.0,11.5,0.608,0.594,5.4,6.2  
,0.875,0.6,7.6,8.3,4.8,1.1,1.6,2.2,1.9,25.1,GS,62,33.4,4.41,1.33,5.74,12.24  
,18.6,103.71,51,26.5,6288.5,1425.5,366.0

```
coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux$ head nba_2017.csv  
,Rk,PLAYER,POSITION,AGE,MP,FG,FGA,FG%,3P,3PA,3P%,2P,2PA,2P%,eFG%,FT,FTA,FT%  
,ORB,DRB,TRB,AST,STL,BLK,TOV,PF,POINTS,TEAM,GP,MPG,ORPM,DRPM,RPM,WINS_RPM,P  
IE,PACE,W,SALARY_MILLIONS,PAGEVIEWS,TWITTER_FAVORITE_COUNT,TWITTER_RETWEET_
```



COUNT

0,1,Russell

Westbrook,PG,28,34.6,10.2,24.0,0.425,2.5,7.2,0.34299999999999997,7.7,16.8,0.45899999999999996,0.47600000000000003,8.8,10.4,0.845,1.7,9.0,10.7,10.4,1.6,0.4,5.4,2.3,31.6,OKC,81,34.6,6.74,-0.47,6.27,17.34,23.0,102.31,46,26.5,4279.0,2130.5,559.0

1,2,James

Harden,PG,27,36.4,8.3,18.9,0.44,3.2,9.3,0.34700000000000003,5.1,9.6,0.53,0.525,9.2,10.9,0.847,1.2,7.0,8.1,11.2,1.5,0.5,5.7,2.7,29.1,HOU,81,36.4,6.38,-1.57,4.81,15.54,19.0,102.98,54,26.5,3279.0,969.0,321.5

2,4,Anthony

Davis,C,23,36.1,10.3,20.3,0.505,0.5,1.8,0.299,9.7,18.6,0.524,0.518,6.9,8.6,0.802,2.3,9.5,11.8,2.1,1.3,2.2,2.4,2.2,28.0,NO,75,36.1,0.45,3.9,4.35,12.81,19.2,100.19,31,22.12,82.5,368.0,104.0

3,6,DeMarcus

Cousins,C,26,34.2,9.0,19.9,0.452,1.8,5.0,0.361,7.2,14.8,0.483,0.498,7.2,9.3,0.772,2.1,8.9,11.0,4.6,1.4,1.3,3.7,3.9,27.0,NO/SAC,72,34.2,3.56,0.64,4.2,11.26,17.8,97.11,30,16.96,1625.5,102.0,91.5

4,7,Damian

Lillard,PG,26,35.9,8.8,19.8,0.444,2.9,7.7,0.37,6.0,12.1,0.49200000000000005,0.516,6.5,7.3,0.895,0.6,4.3,4.9,5.9,0.9,0.3,2.6,2.0,27.0,POR,75,35.9,4.63,-1.49,3.14,10.72,15.9,99.68,38,24.33,1830.5,186.5,43.0

5,8,LeBron

James,SF,32,37.8,9.9,18.2,0.5479999999999999,1.7,4.6,0.363,8.3,13.5,0.611,0.594,4.8,7.2,0.674,1.3,7.3,8.6,8.7,1.2,0.6,4.1,1.8,26.4,CLE,74,37.8,6.49,1.93,8.42,20.43,18.3,98.38,51,30.96,14704.0,5533.5,1501.5

6,9,Kawhi

Leonard,SF,25,33.4,8.6,17.7,0.485,2.0,5.2,0.38,6.6,12.5,0.529,0.541,6.3,7.2,0.88,1.1,4.7,5.8,3.5,1.8,0.7,2.1,1.6,25.5,SA,74,33.4,5.83,1.25,7.08,15.53,17.4,95.79,54,17.64,2446.5,2701.5,716.5

7,10,Stephen

Curry,PG,28,33.4,8.5,18.3,0.46799999999999997,4.1,10.0,0.41100000000000003,4.4,8.3,0.537,0.58,4.1,4.6,0.898,0.8,3.7,4.5,6.6,1.8,0.2,3.0,2.3,25.3,GS,79,33.4,7.27,0.14,7.41,18.8,15.1,105.08,65,12.11,17570.5,12278.0,2893.0

8,11,Kyrie

Irving,PG,24,35.1,9.3,19.7,0.473,2.5,6.1,0.401,6.9,13.6,0.505,0.535,4.1,4.6,0.905,0.7,2.5,3.2,5.8,1.2,0.3,2.5,2.2,25.2,CLE,72,35.1,4.35,-2.3,2.05,8.28,13.5,99.12,47,17.64,4796.0,1541.0,695.0

coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux\$ tail -n +2

nba\_2017.csv | shuf -n 100 > small\_nba\_nohead\_17.csv

coder@9d6c66694a48:~/project/coursera-de-c2-lab1-linux\$

