

# The Research Question(s)

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Stat 133 by Gaston Sanchez

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# Starting Point

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We usually start with some **research question**

- Why are we losing money?
- Who uses/buys our products?
- How can we make more money?
- How do we compare with our competitors?
- When something happened?

# Questions

What?

When?

Where?

Why?

How?

# NBA Data

## 2016-2017

### Last Season

I'll be making extensive use  
of **NBA data** throughout the  
first  $\frac{1}{3}$  of the course...

(I hope you don't get bored/tired of it)

<http://www.basketball-reference.com/>

# NBA players have the highest salaries in the world, but the NFL spends the most money on players

Cork Gaines and Samantha Lee

🕒 Nov. 27, 2017, 3:19 PM 🔥 2,025



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Sporting Intelligence has released [their annual survey of salaries for athletes](#) in the top leagues around the world.

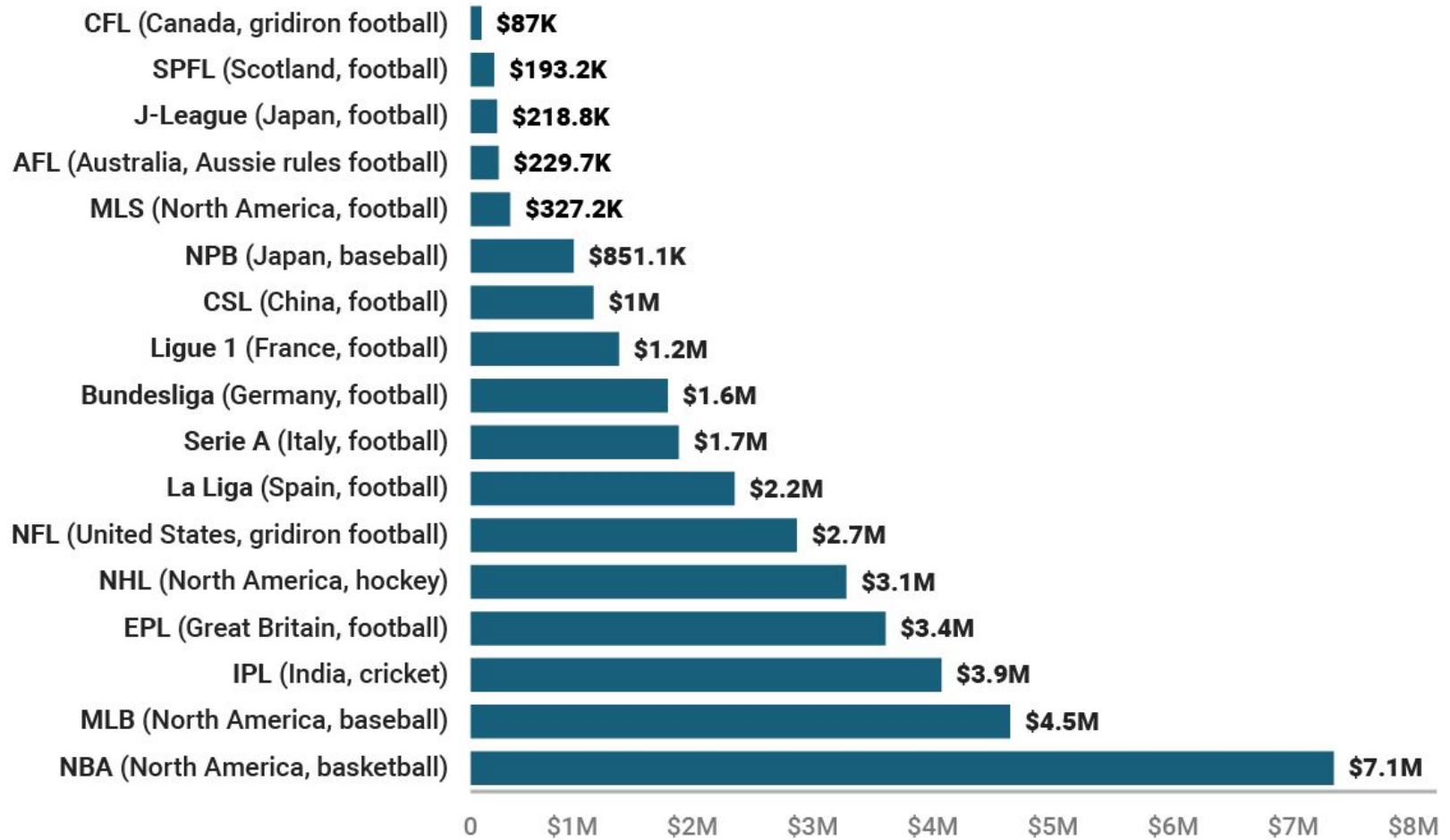
[📈 More Charts](#)



The study looks at the first-team pay for 348 teams across seven different sports in 18 different leagues around the world. [The Oklahoma City Thunder are the new highest-paid sports team in the world](#), with players making an average of \$9.3 million during the 2017-18 season.

Thanks to a salary cap that is skyrocketing due to soaring television revenue, NBA teams have shot up the list in recent years. Of the 25 highest-paid teams in the world, 19 are from the NBA, and overall, the average NBA player makes 7.1 million, tops in the world, and up from \$6.4 million last year.

## AVERAGE SALARIES FOR FIRST-TEAM/ ACTIVE-ROSTER PLAYER



SOURCE: Sporting Intelligence

BUSINESS INSIDER



# The Average Player Salary And Highest-Paid In NBA, MLB, NHL, NFL And MLS



**Kurt Badenhausen**, FORBES STAFF ✓

*I cover sports business with rare dips in education & local economies*

[FULL BIO](#) ✓



Design: Bailey Brautigan, Forbes Staff

# Research Question #1



The more scored **points**,  
the higher the **salary**?

**What do we need to  
answer this question?**

# NBA Data

[basketball-reference.com](https://basketball-reference.com)

# Roster

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[Glossary](#)

No.		Pos	Ht	Wt	Birth Date		Exp	College
30	<a href="#">Stephen Curry</a>	PG	6-3	190	March 14, 1988		7	<a href="#">Davidson College</a>
11	<a href="#">Klay Thompson</a>	SG	6-7	215	February 8, 1990		5	<a href="#">Washington State University</a>
9	<a href="#">Andre Iguodala</a>	SF	6-6	215	January 28, 1984		12	<a href="#">University of Arizona</a>
34	<a href="#">Shaun Livingston</a>	PG	6-7	192	September 11, 1985		11	
5	<a href="#">Kevon Looney</a>	C	6-9	220	February 6, 1996		1	<a href="#">University of California, Los Angeles</a>
23	<a href="#">Draymond Green</a>	PF	6-7	230	March 4, 1990		4	<a href="#">Michigan State University</a>
35	<a href="#">Kevin Durant</a>	SF	6-9	240	September 29, 1988		9	<a href="#">University of Texas at Austin</a>
3	<a href="#">David West</a>	C	6-9	250	August 29, 1980		13	<a href="#">Xavier University</a>
0	<a href="#">Patrick McCaw</a>	SG	6-7	185	October 25, 1995		R	<a href="#">University of Nevada, Las Vegas</a>
27	<a href="#">Zaza Pachulia</a>	C	6-11	270	February 10, 1984		13	
15	<a href="#">Damian Jones</a>	C	7-0	245	June 30, 1995		R	<a href="#">Vanderbilt University</a>
20	<a href="#">James Michael McAdoo</a>	PF	6-9	230	January 4, 1993		2	<a href="#">University of North Carolina</a>
21	<a href="#">Ian Clark</a>	SG	6-3	175	March 7, 1991		3	<a href="#">Belmont University</a>
1	<a href="#">JaVale McGee</a>	C	7-0	270	January 19, 1988		8	<a href="#">University of Nevada, Reno</a>
22	<a href="#">Matt Barnes</a>	SF	6-7	226	March 9, 1980		13	<a href="#">University of California, Los Angeles</a>

What Data  
do you need?

# Per Game

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Glossary

Rk		Age	G	GS	MP	FG	FGA	FG%	3P	3PA	3P%	2P	2PA	2P%
1	<a href="#">Klay Thompson</a>	26	<a href="#">78</a>	78	34.0	8.3	17.6	.468	3.4	8.3	.414	4.8	9.3	.516
2	<a href="#">Kevin Durant</a>	28	<a href="#">62</a>	62	33.4	8.9	16.5	.537	1.9	5.0	.375	7.0	11.5	.608
3	<a href="#">Stephen Curry</a>	28	<a href="#">79</a>	79	33.4	8.5	18.3	.468	4.1	10.0	.411	4.4	8.3	.537
4	<a href="#">Draymond Green</a>	26	<a href="#">76</a>	76	32.5	3.6	8.6	.418	1.1	3.5	.308	2.5	5.1	.494
5	<a href="#">Andre Iguodala</a>	33	<a href="#">76</a>	0	26.3	2.9	5.5	.528	0.8	2.3	.362	2.0	3.1	.651
6	<a href="#">Matt Barnes</a>	36	<a href="#">20</a>	5	20.5	1.9	4.5	.422	0.9	2.6	.346	1.0	1.9	.526
7	<a href="#">Zaza Pachulia</a>	32	<a href="#">70</a>	70	18.1	2.3	4.4	.534	0.0	0.0	.000	2.3	4.4	.538
8	<a href="#">Shaun Livingston</a>	31	<a href="#">76</a>	3	17.7	2.3	4.2	.547	0.0	0.0	.333	2.3	4.1	.550
9	<a href="#">Patrick McCaw</a>	21	<a href="#">71</a>	20	15.1	1.5	3.5	.433	0.6	1.7	.333	0.9	1.7	.533
10	<a href="#">Ian Clark</a>	25	<a href="#">77</a>	0	14.8	2.7	5.6	.487	0.8	2.1	.374	1.9	3.5	.556
11	<a href="#">David West</a>	36	<a href="#">68</a>	0	12.6	2.0	3.7	.536	0.0	0.1	.375	1.9	3.6	.541
12	<a href="#">JaVale McGee</a>	29	<a href="#">77</a>	10	9.6	2.7	4.1	.652	0.0	0.1	.000	2.7	4.1	.660
13	<a href="#">James Michael McAdoo</a>	24	<a href="#">52</a>	2	8.8	1.2	2.3	.530	0.0	0.2	.250	1.2	2.1	.550
14	<a href="#">Damian Jones</a>	21	<a href="#">10</a>	0	8.5	0.8	1.6	.500	0.0	0.0		0.8	1.6	.500
15	<a href="#">Kevon Looney</a>	20	<a href="#">53</a>	4	8.4	1.1	2.0	.523	0.0	0.2	.222	1.0	1.8	.551
16	<a href="#">Anderson Varejao</a>	34	<a href="#">14</a>	1	6.6	0.4	1.0	.357	0.0	0.0		0.4	1.0	.357
17	<a href="#">Briante Weber</a>	24	<a href="#">7</a>	0	6.6	0.7	2.0	.357	0.0	0.4	.000	0.7	1.6	.455



## Salaries

Rk		Salary
1	<a href="#">Kevin Durant</a>	\$26,540,100
2	<a href="#">Klay Thompson</a>	\$16,663,575
3	<a href="#">Draymond Green</a>	\$15,330,435
4	<a href="#">Stephen Curry</a>	\$12,112,359
5	<a href="#">Andre Iguodala</a>	\$11,131,368
6	<a href="#">Shaun Livingston</a>	\$5,782,450
7	<a href="#">Zaza Pachulia</a>	\$2,898,000
8	<a href="#">David West</a>	\$1,551,659
9	<a href="#">Anderson Varejao</a>	\$1,551,659
10	<a href="#">JaVale McGee</a>	\$1,403,611
11	<a href="#">Kevon Looney</a>	\$1,182,840
12	<a href="#">Damian Jones</a>	\$1,171,560
13	<a href="#">Ian Clark</a>	\$1,015,696
14	<a href="#">James Michael McAdoo</a>	\$980,431
15	<a href="#">Jason Thompson</a>	\$945,126
16	<a href="#">Patrick McCaw</a>	\$543,471
17	<a href="#">Matt Barnes</a>	\$383,351
18	<a href="#">Elliot Williams</a>	\$250,000
19	<a href="#">Briante Weber</a>	\$102,898
20	<a href="#">Elgin Cook</a>	\$50,000
21	<a href="#">Cameron Jones</a>	\$50,000
22	<a href="#">Scott Wood</a>	\$50,000
23	<a href="#">Phil Pressey</a>	\$35,000



# Discussion and brainstorming during lecture

# Demo

# The Data Computing Diagram (DCD)

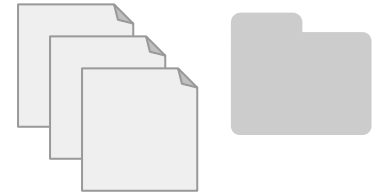
Data  
Sets



Software &  
Languages



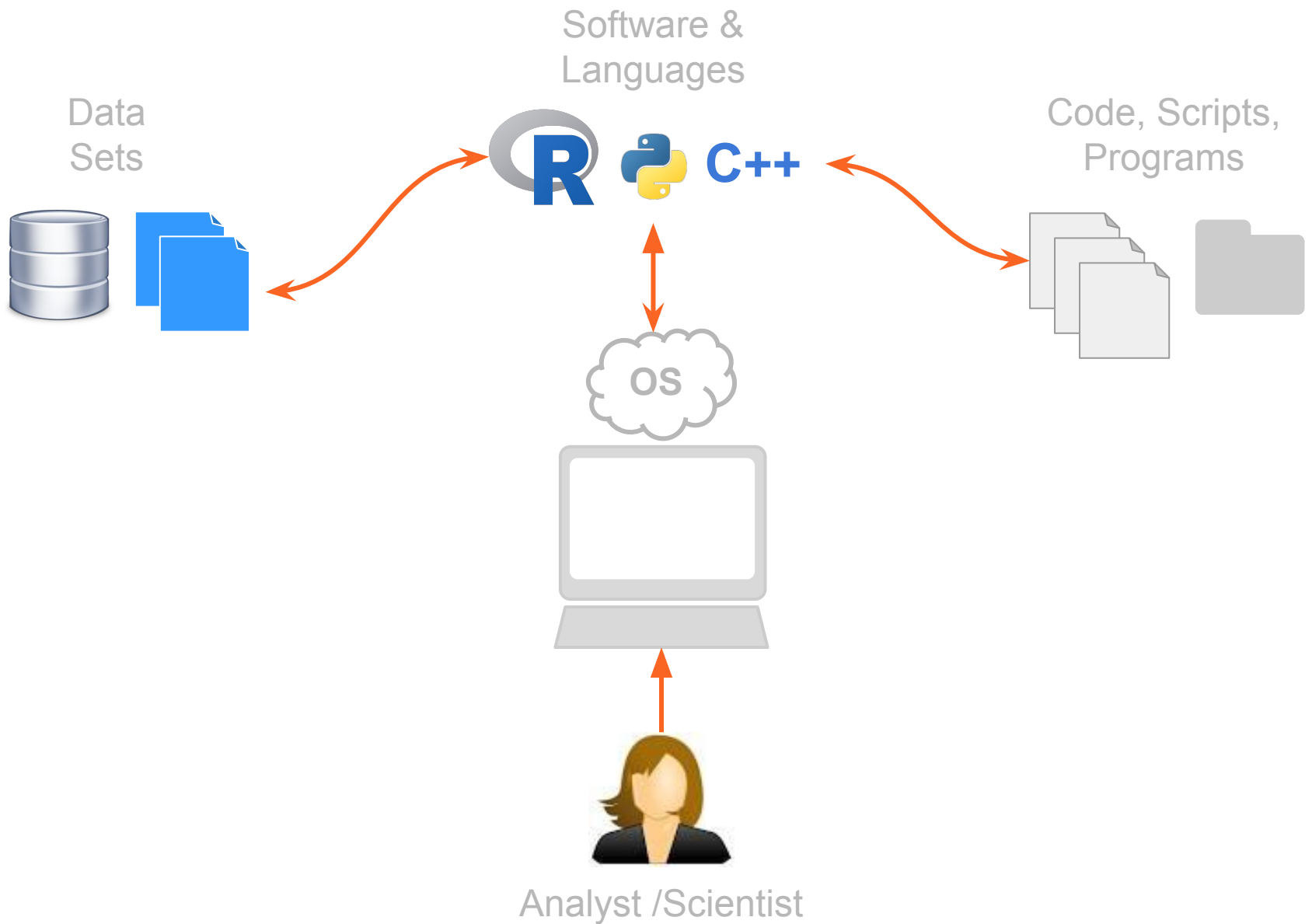
Code, Scripts,  
Programs

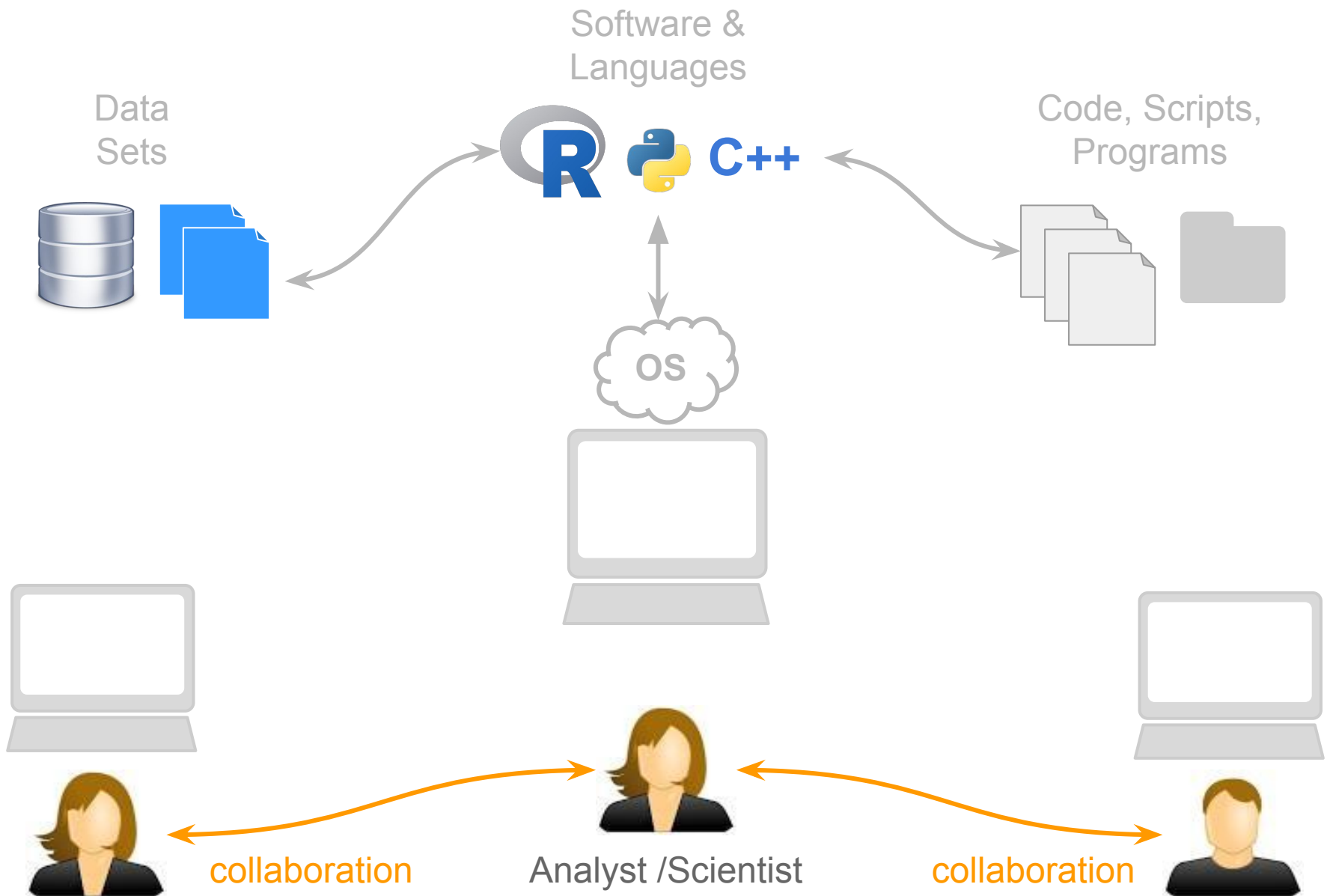


Computers



Analyst /Scientist





# Reminder

# Install Software

R

RStudio