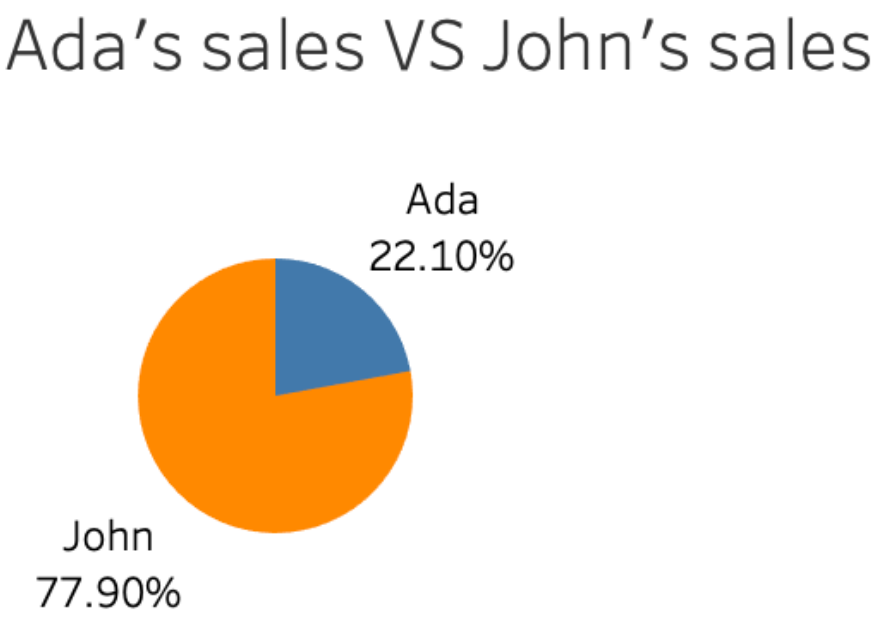
Story Telling: SuperCookies Store

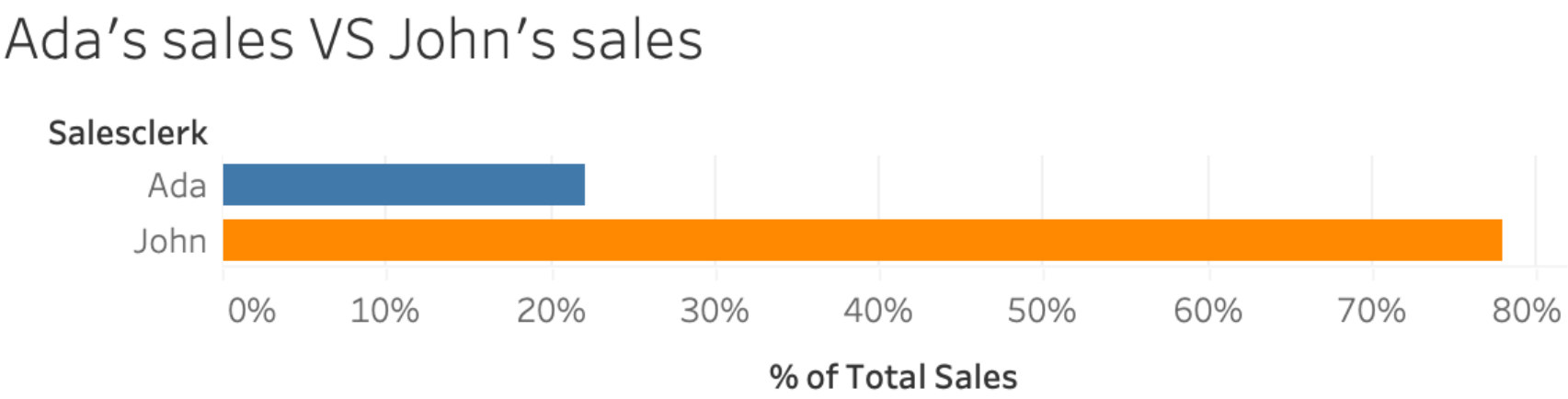
	A	B	C	D	E	F	G	H	I
1	Sales_Date	Day-of-Week	Salesclerk	Temperature	Tweets	Cost of Good Sold	Price	Sales	Profit
2	1/16/2019	Wednesday	Ada	56	6	64.4	0.3	106	39.25%
3	1/25/2019	Friday	Ada	59	7	64.45	0.3	84	23.27%
4	1/15/2019	Tuesday	Ada	60	6	64.4	0.5	137	52.99%
5	1/17/2019	Thursday	Ada	60	2	64.2	0.3	85	24.47%
6	1/23/2019	Wednesday	Ada	60	7	64.45	0.3	87	25.92%
7	1/10/2019	Thursday	John	61	10	85.6	0.5	100	14.40%
8	1/14/2019	Monday	John	64	8	85.5	0.5	135	36.67%
9	2/3/2019	Sunday	John	65	6	85.4	0.5	140	39.00%
10	1/6/2019	Sunday	Ada	66	8	64.5	0.5	120	46.25%
11	2/4/2019	Monday	Ada	67	3	64.25	0.3	94	31.65%
12	2/6/2019	Wednesday	Ada	68	5	64.35	0.3	114	43.55%
13	2/11/2019	Monday	John	68	2	85.2	0.5	145	41.24%
14	1/3/2019	Thursday	John	69	5	85.35	0.5	150	43.10%
15	1/5/2019	Saturday	Ada	69	6	64.4	0.3	116	44.48%
16	1/9/2019	Wednesday	John	69	8	85.5	0.5	177	51.69%
17	1/26/2019	Saturday	John	69	0	85.1	0.5	125	31.92%
18	2/2/2019	Saturday	John	69	9	85.55	0.5	128	33.16%
19	1/27/2019	Sunday	Ada	70	6	64.4	0.3	120	46.33%

Story Telling: Fire or Keep Decision

As we see, Ada has significantly **LESS total sales.**!



Story Telling: Fire or Keep Decision

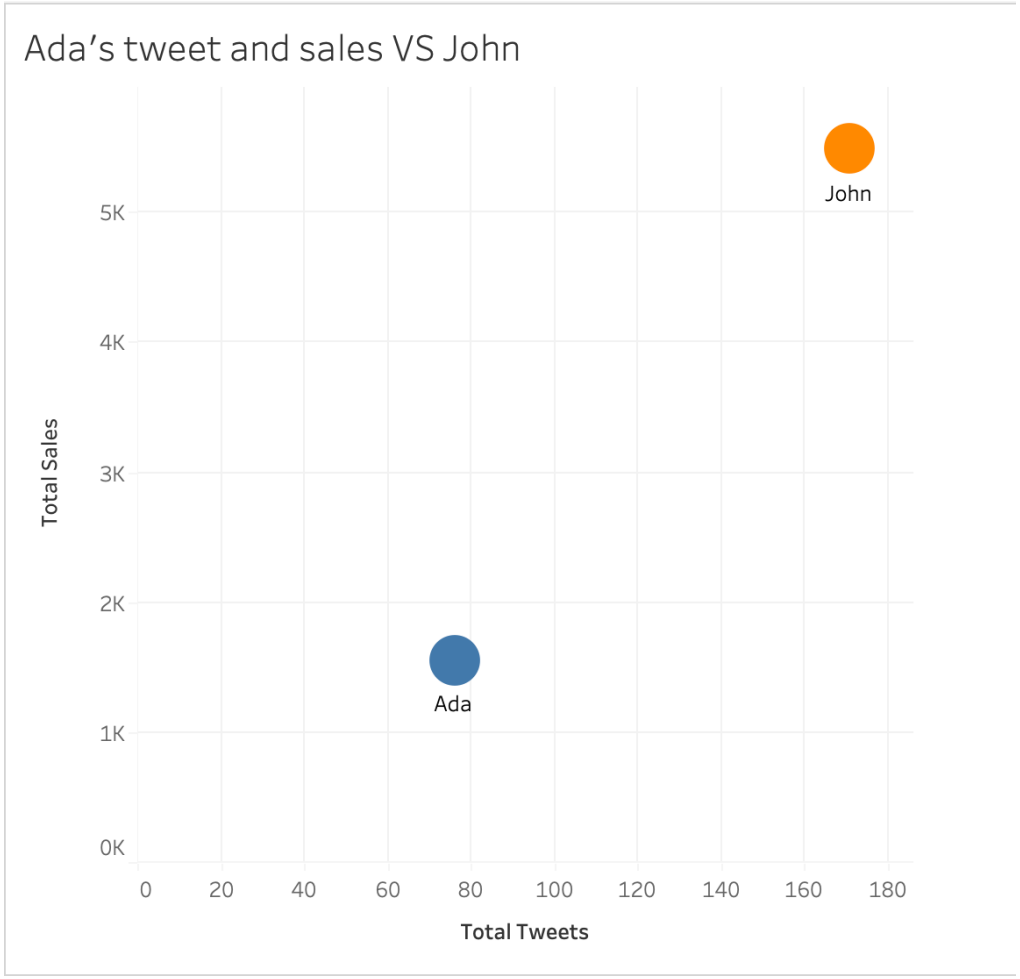


Story Telling: Fire or Keep Decision

I observed a huge performance difference between your sales employees. What are you going to do to fix this problem?

Story Telling: Fire or Keep Decision

Ada did **LESS total Sales and Tweets!**



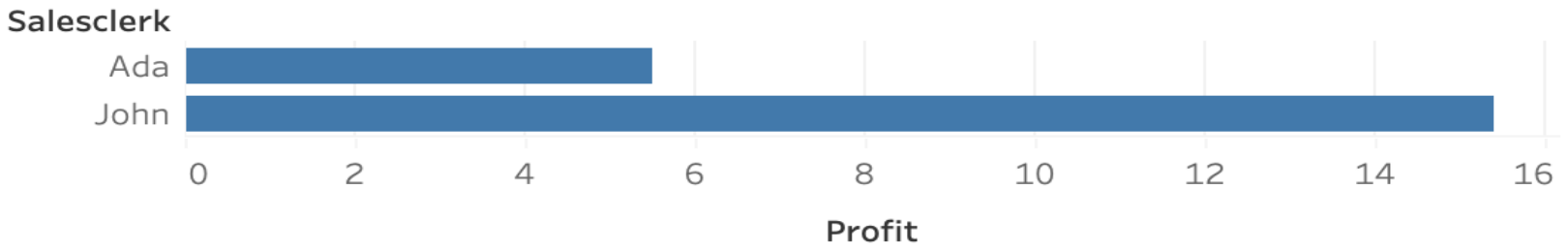
Story Telling: Fire or Keep Decision

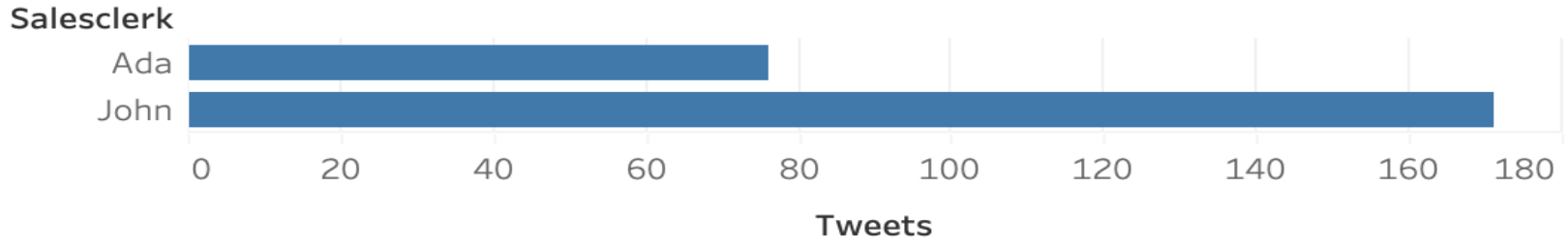
What?????? She is terrible in sales! Ada is got to go!

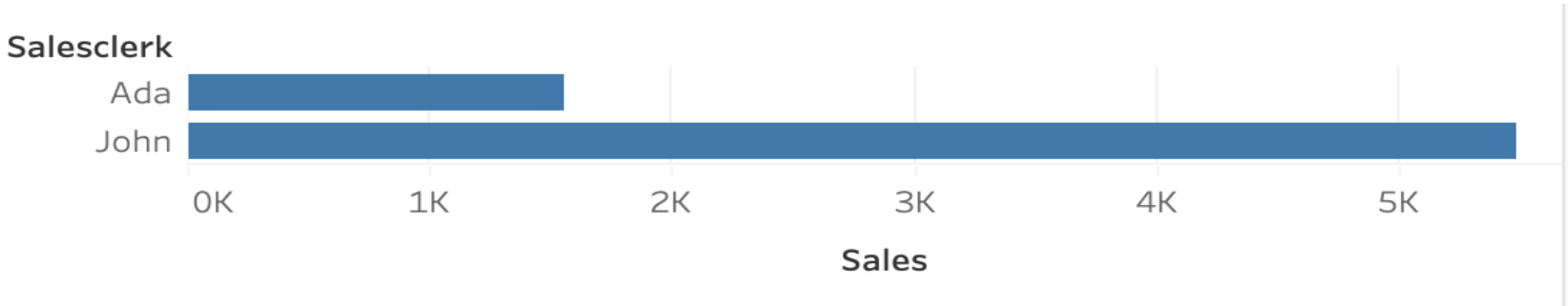
Story Telling: Fire or Keep Decision

Ada has:

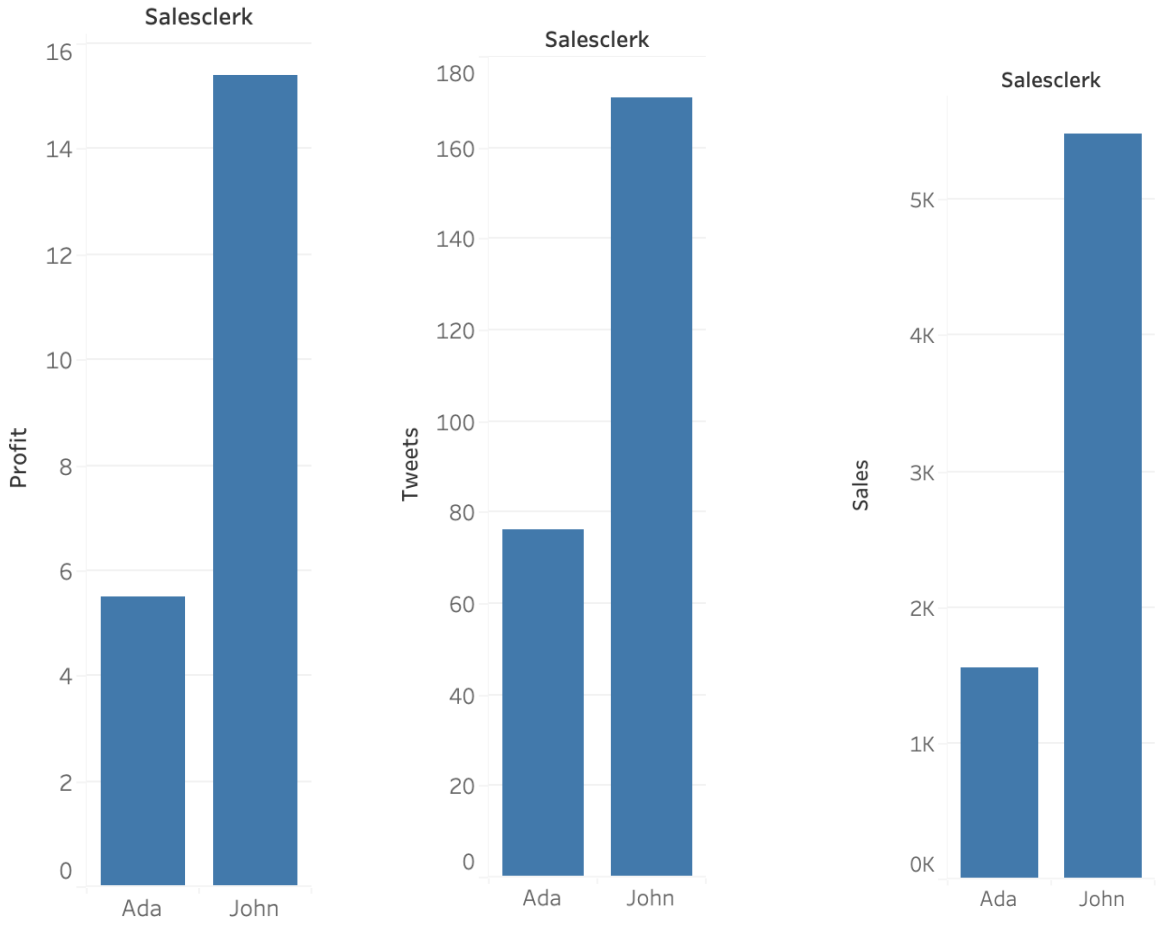
LESS total Profit, LESS total Tweets, LESS total Sales







Story Telling: Fire or Keep Decision



Ada has:

LESS total Profit,

LESS total Tweets,

LESS total Sales

Story Telling: Fire or Keep Decision

You are fired!

Story Telling: Fire or Keep Decision

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Ada has access to data and she decided to figure out a way to prove her hard working!

Story Telling: Fire or Keep Decision

What should I do?

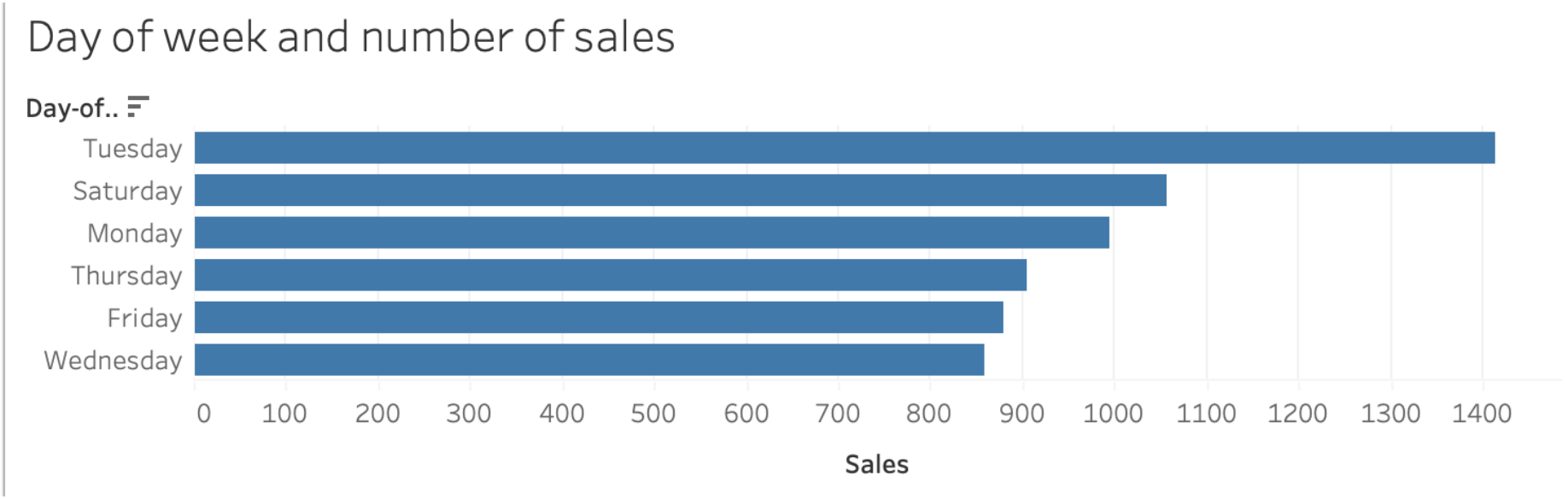
Story Telling: Fire or Keep Decision

Can you help me?

Story Telling: Fire or Keep Decision

Story Telling: Fire or Keep Decision

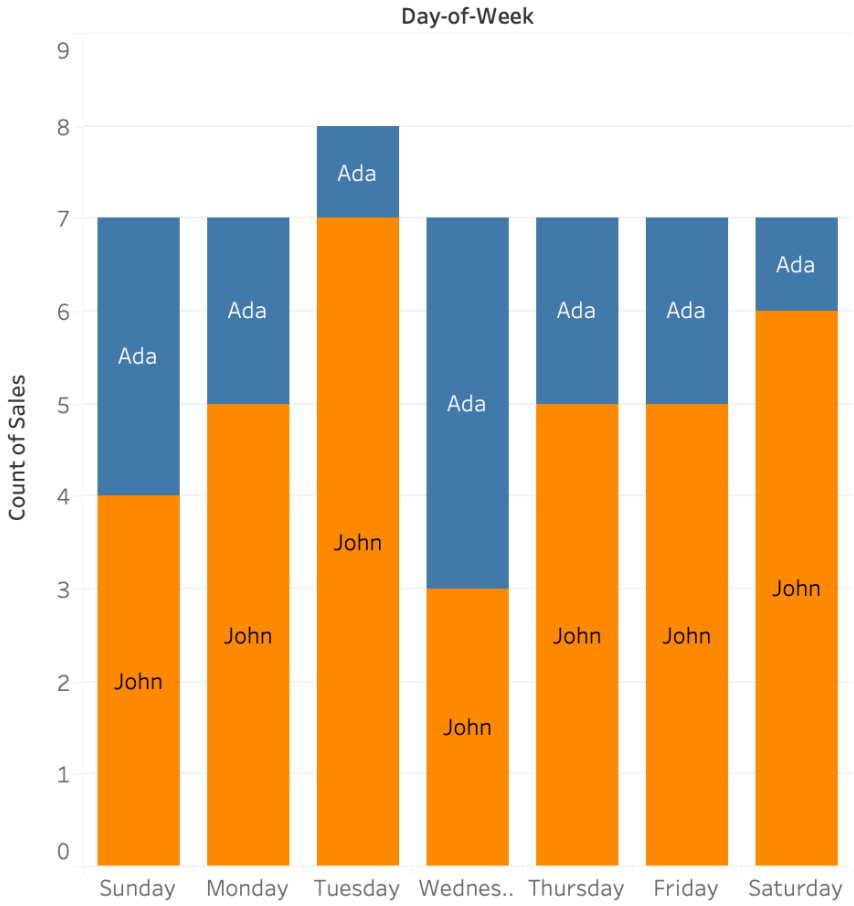
1- Day of the week is effective on number of sales



The busiest days are Tuesday, Saturday, and Monday.

Story Telling: Fire or Keep Decision

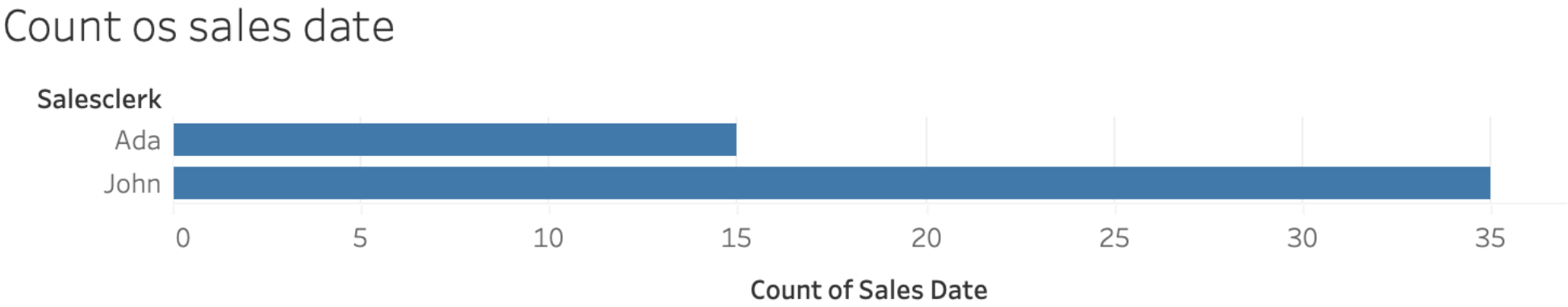
As we see day of the week can impact number of sales



John worked the most Tuesdays, Saturdays, and Mondays which are busy days.

Story Telling: Fire or Keep Decision

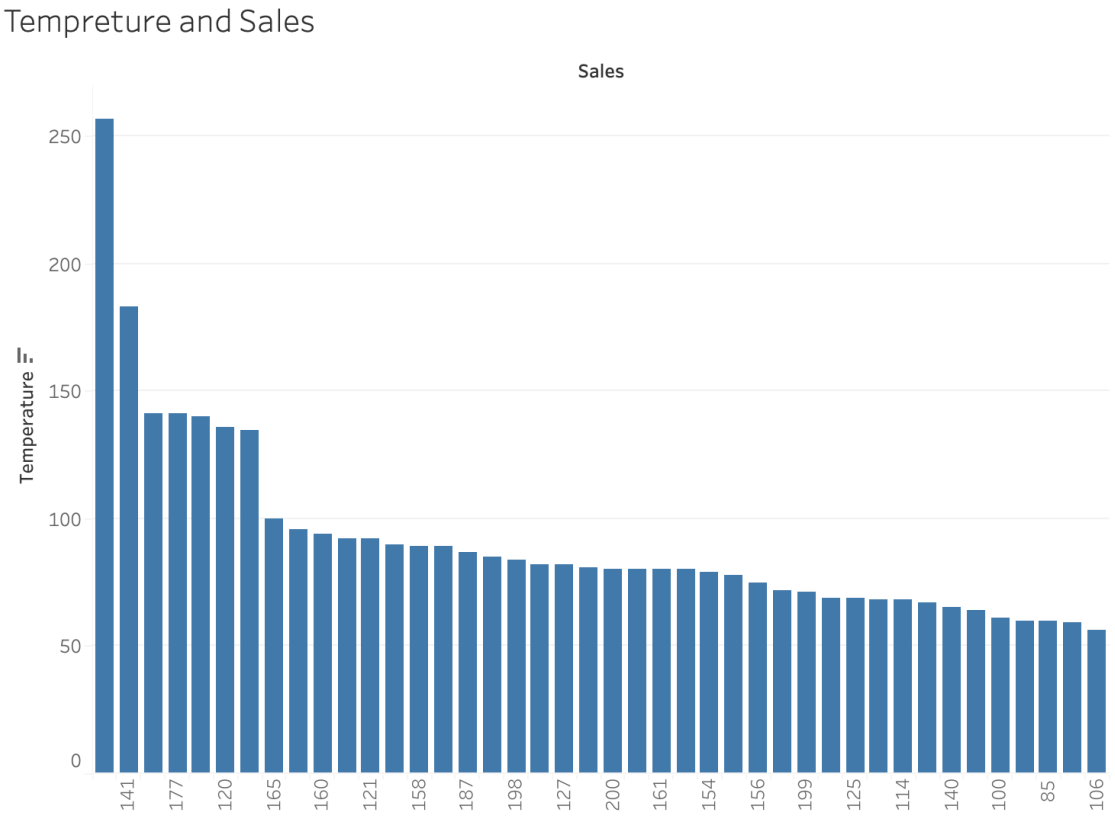
2- Number of working days is different between Ada and John!



The evaluation is not fair. Ada's performance is using only **15 days**.
But, John is evaluated over a longer period of **35 days.**.

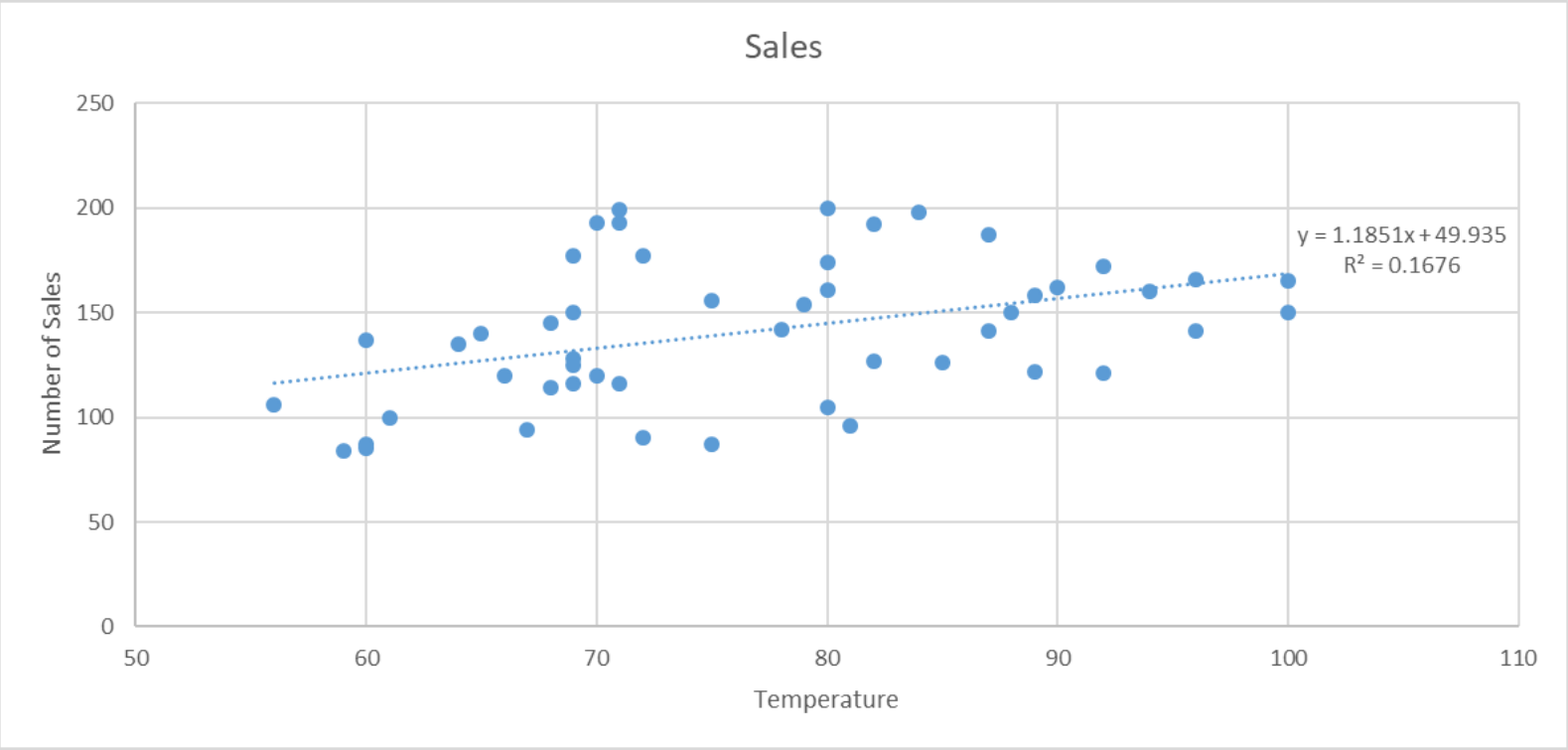
Story Telling: Fire or Keep Decision

3- it should be considered that sales rate is different when temperature changes.



Story Telling: Fire or Keep Decision

Temperature is impacting on Sales, and we see a **positive correlation** between **Temperature** and **Sales**.



Story Telling: Fire or Keep Decision

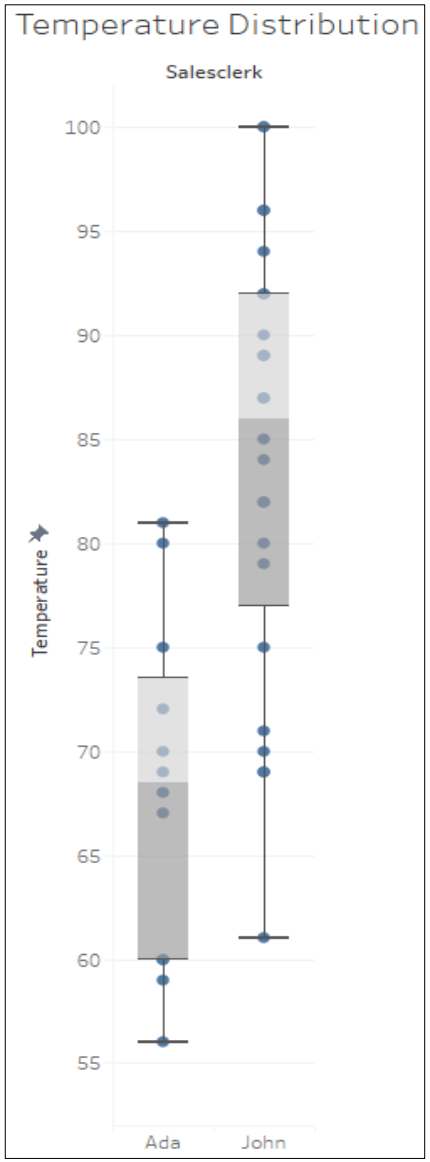
As we see the range, median and average is different for John's sale date and Ada.

John's sales date:

- the temperatures **range** from **61 to 100**
- **average** temperature is **80.65**
- **median** temperature is **86**

Ada's sales dates:

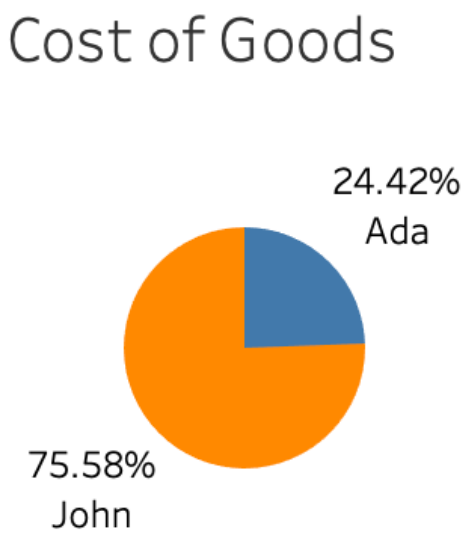
- temperatures **range** from **56 to 81**
- **average** temperature is **67.6**
- **median** temperature is **68.5**

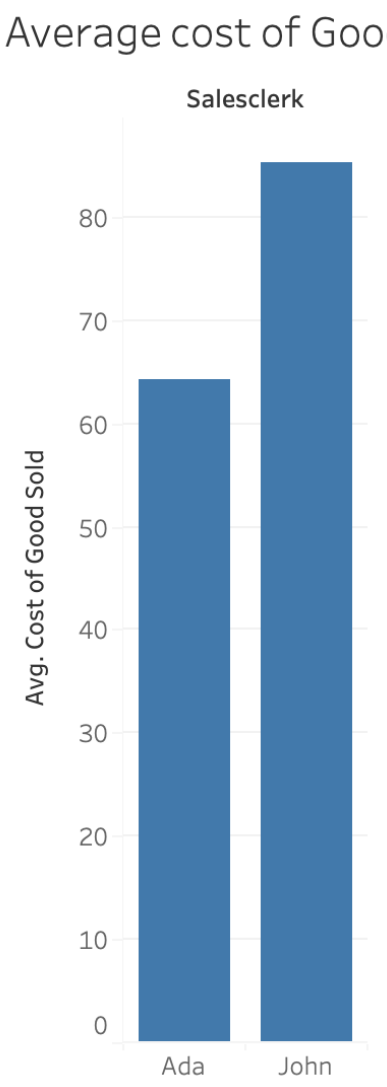


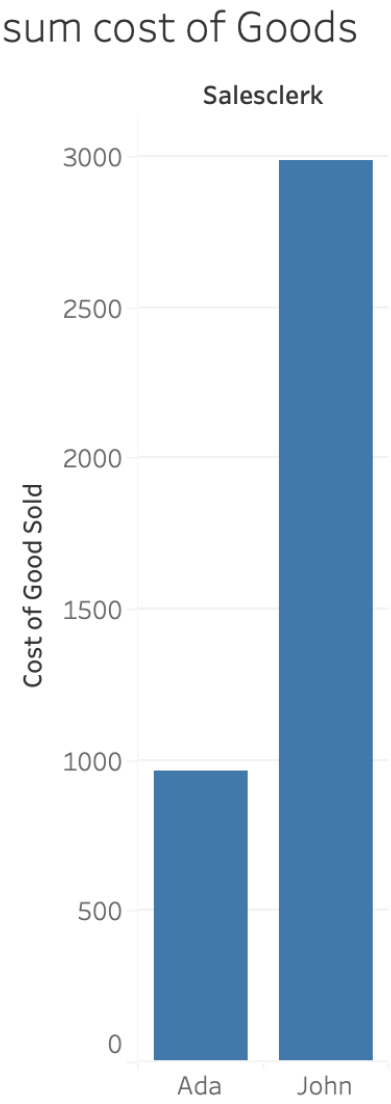
Story Telling: Fire or Keep Decision

4- The cost of goods sold is not fair!

average cost for John of goods sold is **85.34**.
average cost for Ada is goods sold: **64.35**
Ada has a lower **35 total cost of goods sold.**

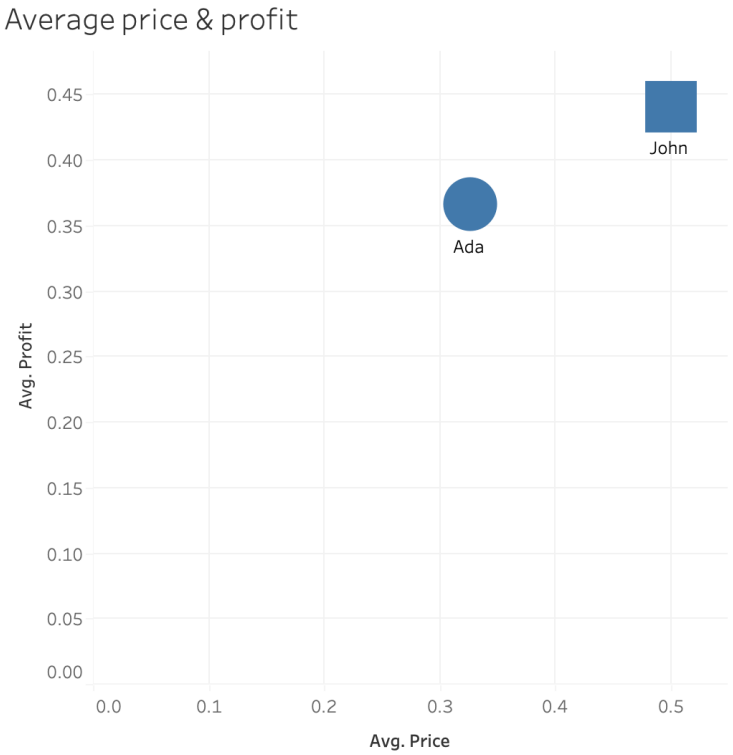






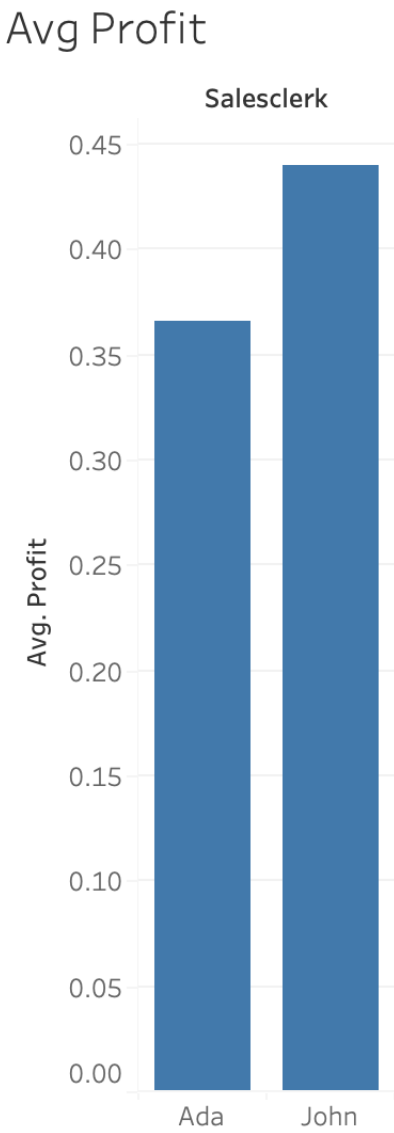
Story Telling: Fire or Keep Decision

5- Average profits are almost similar between Ada and John

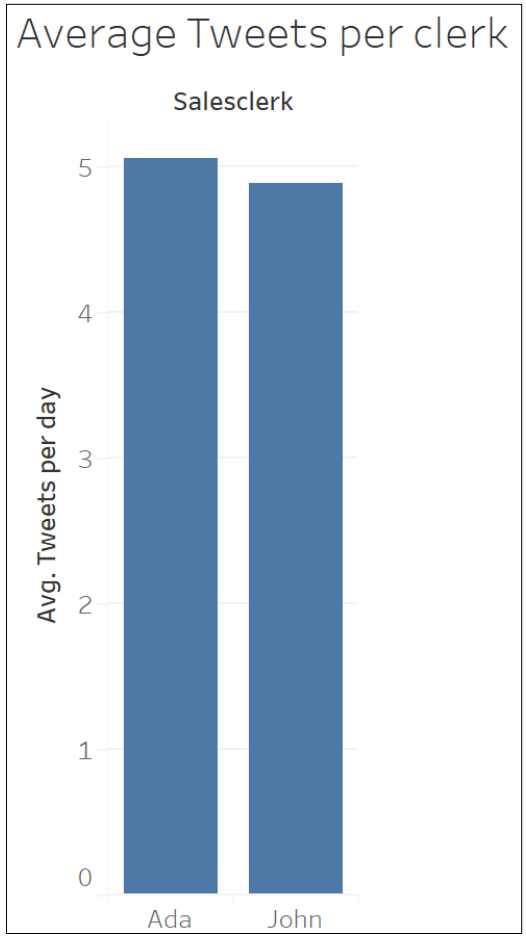


The **difference in average profits** between Ada and John is **7.41%**! John has an **average profit of 44.02% and** Ada has an **average profit of 36.61%.**

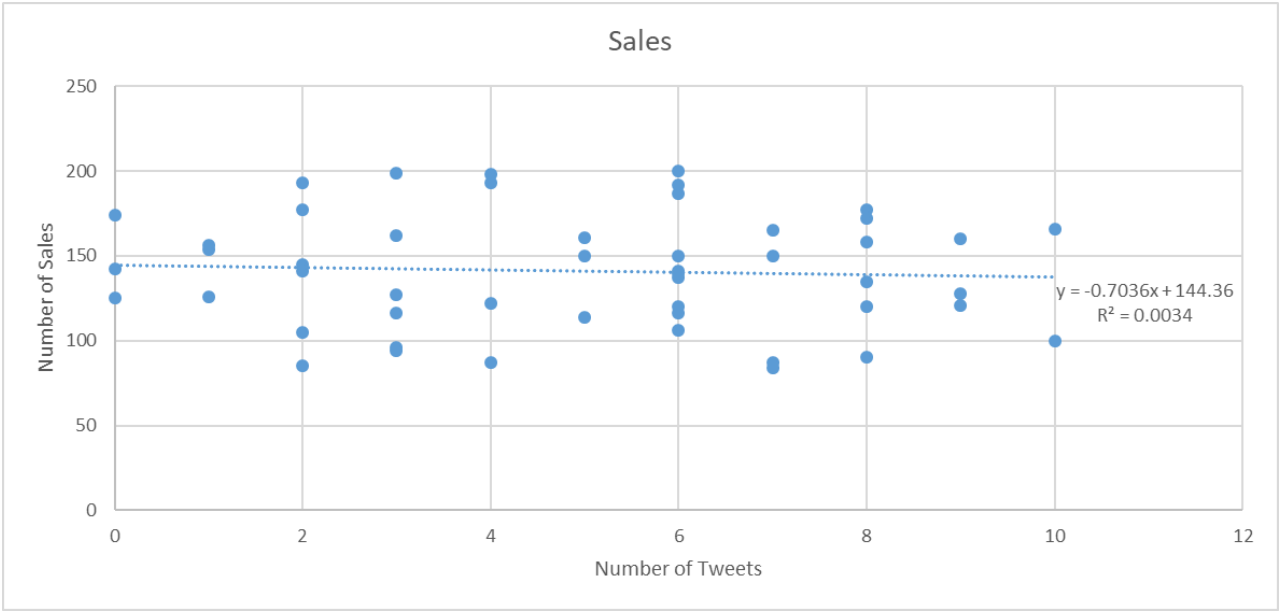
The difference in the average profits is explained like below: John has a of cookie higher average price sold and more sales



Story Telling: Fire or Keep Decision



6- Tweets may have no impact on sales!!!
Negative between Sales and Tweet. Both clerks have same **Average Tweet/Days** but Ada has a lower total number of tweets!!!



Story Telling: Fire or Keep Decision

Showtime!

In a Nutshell:

Since the management used totals to understand Ada's performance and evaluate the outputs, evaluation of Ada looks biased. Here are Ada's friend reason to help her out with the problem:

1- Day of the week

2- Number of evaluation days

3- Temperature

4- Total cost of goods sold and Price

5- Profit

6- Tweets

Day of the week: Based on provided data, Tuesdays, Mondays, and Saturdays are the busiest days of the week. John was in an advantage because he worked the most of those days.

Number of evaluation days: The compression is unfair between two clerk because Ada worked only 15 days vs. John worked 35 days. Ada has worked less than half the time that John has.

Temperature: The average temperature when Ada was on duty was 67.6 and 80.65 when John was on duty. When temperature is low, less customer buy cookies. It is obvious that weather is a factor to improve sales which again put John in an advantage.

Total cost of goods sold and Price: John's sales account for about 75%, whereas Ada's sales account for about 25% of the total cost of goods sold.
Ada mostly sold cookies with the unit price 0.3. John sold cookies with the unit price of 0.5 which again resulted John to have a higher profit.

Profit: The average net profit between John and Ada was very similar despite of John's more sales and profit. John had an average profit of 44.02%. compared to Ada's 36.61%. Therefore, Ada's firing was not fair.

Tweets: Both John and Ada had about the same average number of tweets per day despite of John having most total tweets. Based on data, we understood that sales are not impacted by the tweets.