

Tableau Project Writeup

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Links to Stories:

Version 1:

<https://public.tableau.com/profile/lauren2923#!/vizhome/CanFitbitHelpYouSleepLaptop/TryingToSleep>

Final:

<https://public.tableau.com/profile/lauren2923#!/vizhome/2018FitbitTracker-v2/TryingToSleep?publish=yes>

Summary:

I wear a Fitbit daily, so I have pretty detailed data around my sleep and activity levels. I decided to explore my sleep and activity data to see if it could help me solve a problem I've been dealing with for a long time - insomnia.

I discovered several types of relationships in the data, which isn't surprising - being able to sleep is likely affected by many factors.

The Tableau Story Points viz will introduce you to the problem (and me!) and display some descriptive stats about the current situation. Then we'll go through several types of factors - activity levels, calorie burn, day of the week and monthly cycle.

Design:

I created a Tableau Story Points because I wanted to try really telling a data story about sleep and bring the user along with some of the more interesting finds from the exploratory analysis. I also wanted to create an experience that's light-hearted and reflects my personality, so I used Bitmojis to convey the feeling of the observation on each page.

The other benefit of using Story Points, is you can tell a whole story without having to cram a lot on one dashboard - which can be so confusing to the user.

I included a lot of captions in the dashboards themselves. I like data visuals that do this, because if the visual isn't completely clear to the user, there is some context available to help them get the right idea quickly, instead of spending time decoding.

I got some great [feedback](#) from a colleague who is also a data visualization hobbyist and I incorporated a lot of it.

I also got great [feedback](#) from my course mentor and incorporated a lot of it.

My notes are shown in the feedback docs. **In pink!**

Resources:

The Tableau Story Point “References” contains all my references.

Data Files:

I created a Tableau Extract for my data because it’s simpler and the application works much faster than using a live connection to the Google Spreadsheets that contain the original data.

I exported these to CSV’s so I could submit with the project.

Feedback 1 - Joel

looking through it I observed this, which probably is confirmation of your comment about full screen, your text is cut off, doesn't scroll:

In full screen it looks fine on my Windows laptop in Chrome. Perhaps you should note that it's best viewed in full screen (do you get graded on the quality of your viz, or just the story?)

- Incorporated this feedback and added a note to the intro story point.

On Viz one I'd love the ability to zoom in, or see key events - ie did searches for insomnia go up after the orange orangutan was elected, sworn in, etc?

- Love this one. I had the idea of adding in timelines of all US wars since the start of the Google Trends data. I'm going to save that for the next Viz project!

On Viz two I'd like to see a legend and again the ability to zoom to a particular period in your life - lots of travel, vacation, etc. (I do this with my Fitbit data too!)

NB, your sleep data actually looks pretty good - hard to see the median, but looks toward 7+ hours. If I shared my data would you like to put it in a similar/comparison Viz? I've been looking a lot at my nightly data vs 30 day trend vs my peer group. I'm a sleep competitor! I get mad when my deep and REM sleep is less than my peer group median for example.

- I totally understand this impulse. A lot of my EDA effort was spent looking at the chronological sequence, but I decided to keep this at the analytics level. I think the "examine my sleep history" is absolutely interesting but perhaps better suited a separate story.

Viz three - interesting! the Y axis label is cut off in all views - can you rotate it, make it span? Should scale be different in the 3 bottom graphs? Harder to interpret? Then again, more data in lighter activity periods? Would it be interesting to look at variable periods - 5 day work week vs 2 day weekends?

Viz 4 - cool! BUT, the text is cutoff at your thrilling conclusion, even in full screen mode:

what is the period of this data? total for data set, month....? You're not saying that on the one day you burned 4400 calories that you slept 15 hours, are you?

OOOOHHHH, I just realized I could hover and get underlying data = DUH! BUT, you didn't note that on the Viz - I suppose as a rusty Tableau fan I should have just ASSUMED that, but I forgot, I was lost in thinking about the data.... Maybe I can/should retract some of my comments above (I'm writing in real time, as I go through the data). Again, are you graded on quality of the viz?

- Great catch. This viz did highlight 4 days of problematic data. I used the native Tableau functionality to exclude dates that had somehow been double-counted. It's not surprising, I observed some faults in the Fitbit data before.

OOOOHHHH 2 - I just realized that Tableau had jumped out of full screen mode, so disregard the above shot, except that it confirms what you said about Tableau needing to do more work.

Looking back at Viz 2 and "keep only" for 7.5 hours didn't change the lower Viz, time by phase - would have liked that - this is something I don't like about the way Fitbit shows me my data - if I sleep 4 hours or 6 hours it shows phase by %, not time and it can be misleading when I look at multiple days. Your Viz could fix that!

- Made that change - I activated the "Use as Filter" setting on the upper Viz container.

Viz 5 - fascinating data! I'll leave this one at that... I did note the correlation in activity and cycle week as well - kind of would have expected that, having lived with a woman for 35 years now!

Viz 6 - KEWL. I've also often felt this to be the case. For SURE I'm both more active and sleep better on weekends. Have never looked closer at phase of the work week, would love to see my data this way.....

BTW, I love your avatars on this, very cute!

I read the conclusions and saw "no alcohol" this is something I was looking to see - a correlation between alcohol consumption and sleep. I know it would be harder to get the data.

Maybe one could hijack the water consumption input on fitbit to actually record ounces of alcohol consumed instead (by % alcohol for wine, beer, cocktails?) and correlate that to sleep - of COURSE there's a correlation! I bet there's one to next-days activity, calories burned, etc, especially after a "big night out" (or Jo came over for dinner ;-)... I have another variable I've been paying a lot of attention to lately as well - let's discuss that one by phone since it's a bit more sensitive and I don't want to write about it.....

Thanks for sharing, as always my comments above are meant solely as constructive feedback.....

JO

Feedback - Prasad

Very interesting visualization Lauran. You may put up this project in your github, udacity and other profiles. Just think about whether you put up this as a data of some anonymous user or yourself as the data is of personal nature.

Histogram - it is better to have x-axis label as 'Total Sleep (hours)' [it is obvious that it is bin as it is histogram) and y-axis as Frequency.

- Did these changes.

It is better to avoid labelling dots on scatterplot. Most of the time it looks cluttered, and some of dots left unlabelled causing confusion. You can use tooltip to provide exact value of data points.

- I changed the viz - I created a calculated field for Week part (School night or weekend) and used that to color the marks. I also abbreviated the mark labels and put them on the points in order to clean up the viz:

BEFORE:

AFTER:

The best back ground for visualization is white as other background color may distract from important visual elements. But it is up to your choice.

- I didn't change this.

For the 'Day of The Week Activity and Sleep' chart, line chart is better suited than bar chart since it is a time series data.

- I made this change - it does look much cleaner!

In last section (conclusions), something is cut off in the end. Please check.

- Yep - I had to fix the containers.