Bellabeat Case Study
Wellness Insights Through Smart Device Data

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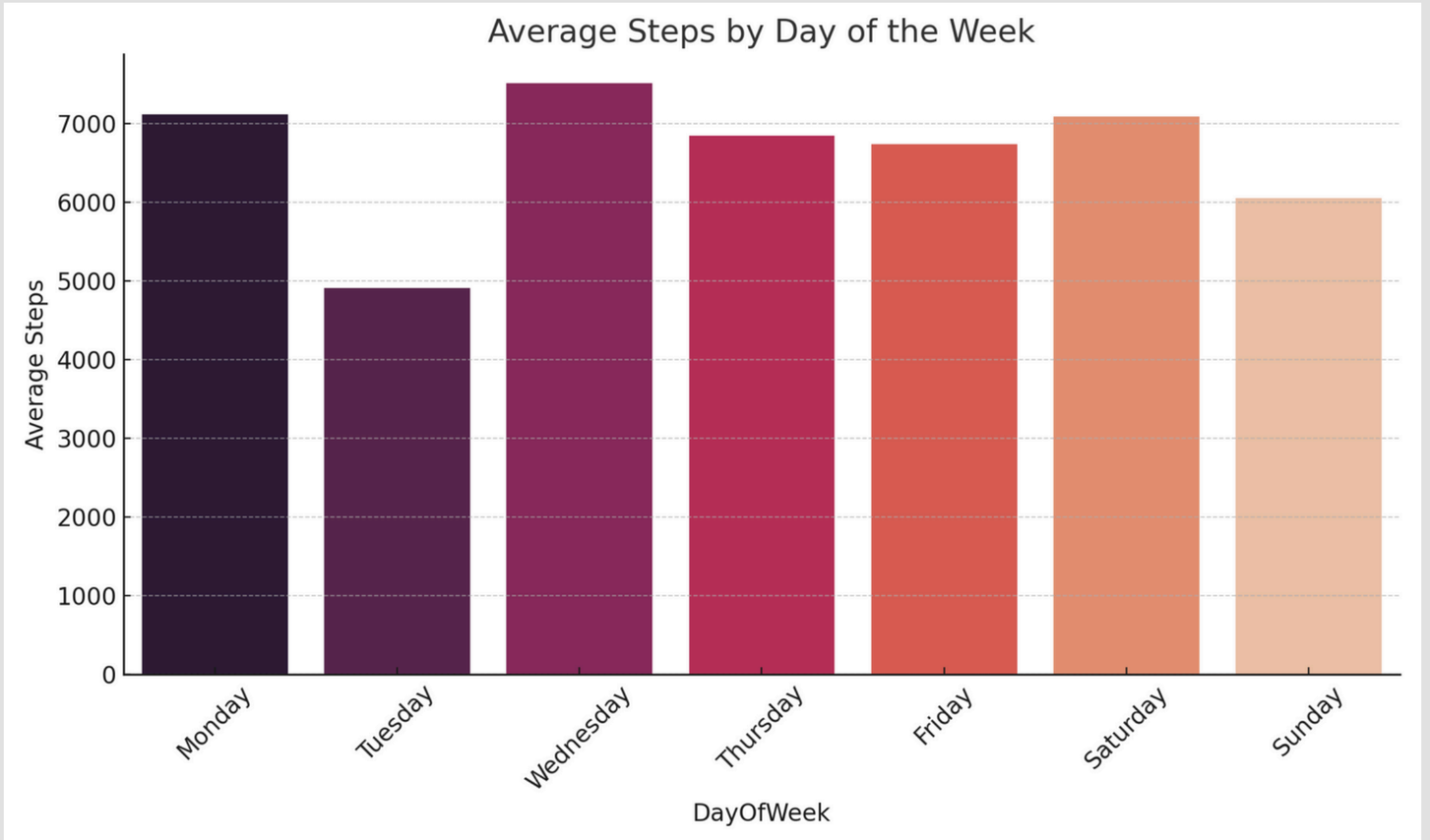
Meet The Data

- 👥 Total Users: 35
- 🚶‍♂️ Avg Daily Steps: 6,546
- 🔥 Avg Daily Calories Burned: 2,189
- 🛋️ Avg Sedentary Minutes: 995
- 💪 Avg Very Active Minutes: 16

I used Bellabeat's dailyActivity_merged.csv, which includes 940 daily logs of steps, calories, and activity levels.
This gave me a solid base to explore questions about movement, energy burn, and how much time people actually spend sitting.
I wanted to find out: How active are people, really? Does effort always show up in calories burned?

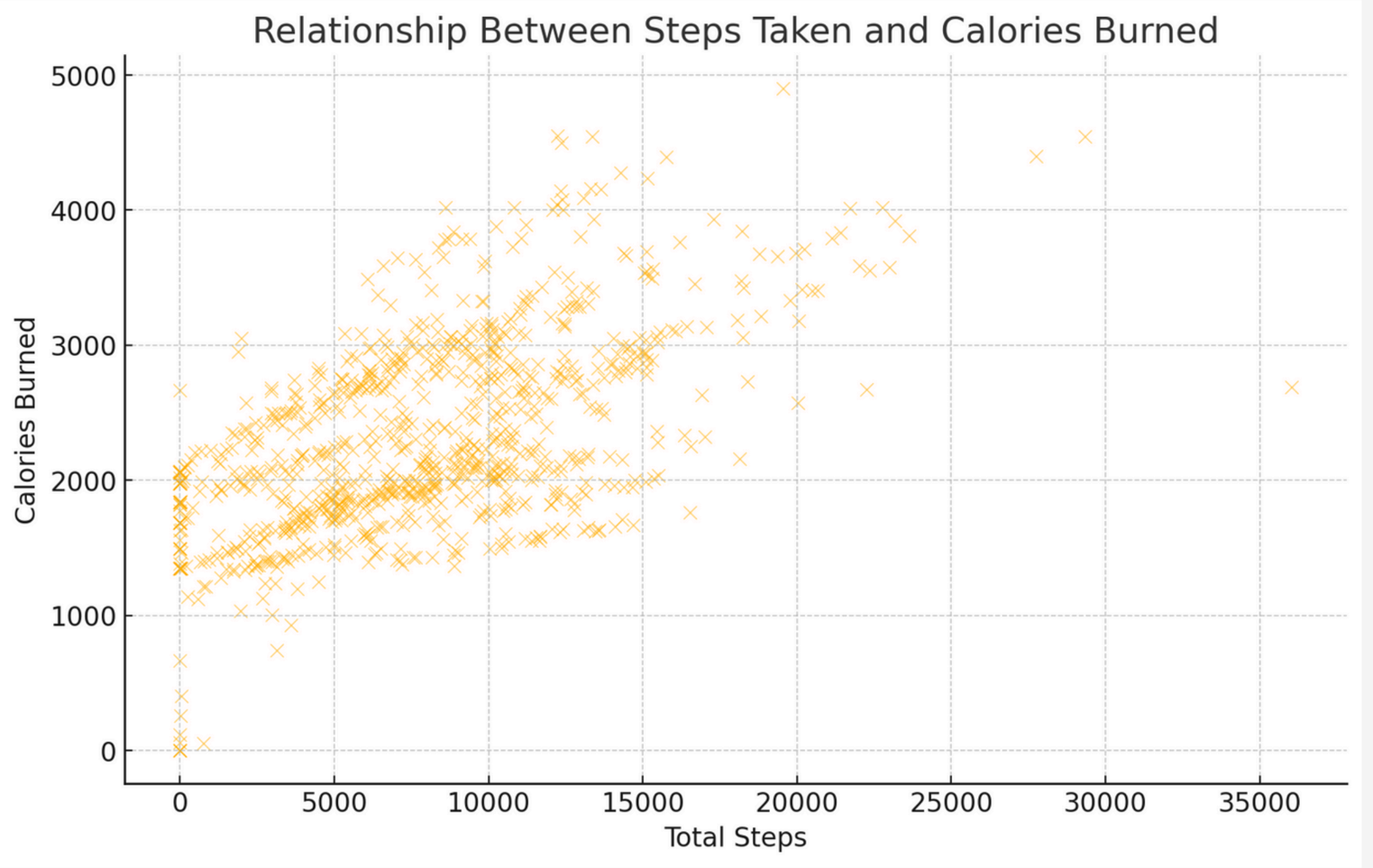
Does the day of the week affect how much people walk?

Turns out... Wednesday came out on top — the most steps on average. But Tuesday was surprisingly the lowest. This makes me wonder: does midweek energy spike before things slow down again? Movement isn't always about routine. It might come down to motivation.

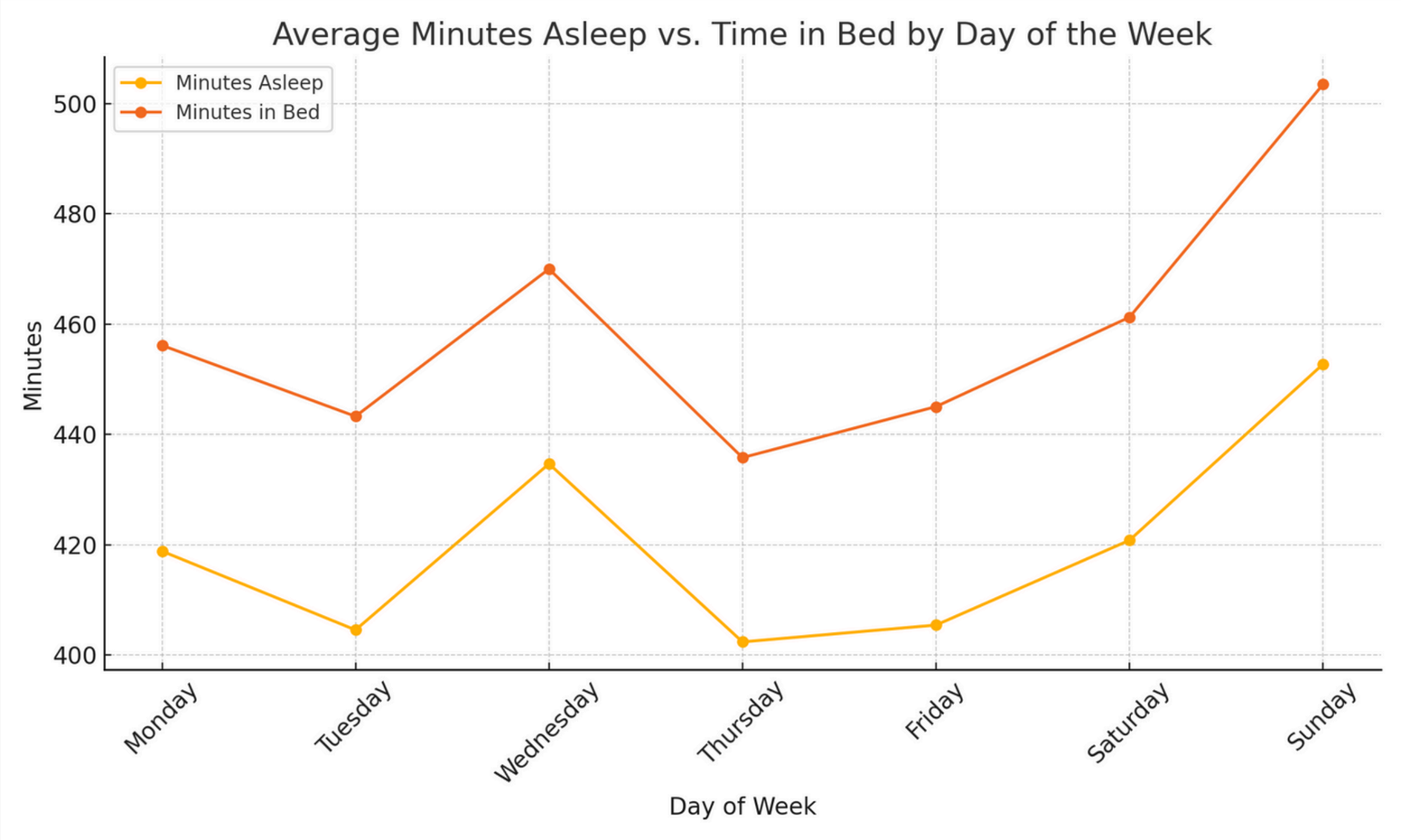


Steps ≠ Calories: Not All Movement Is Equal

Some users burned a lot of calories without taking many steps. It made me wonder what other factors—like workout intensity or body composition—were influencing results.



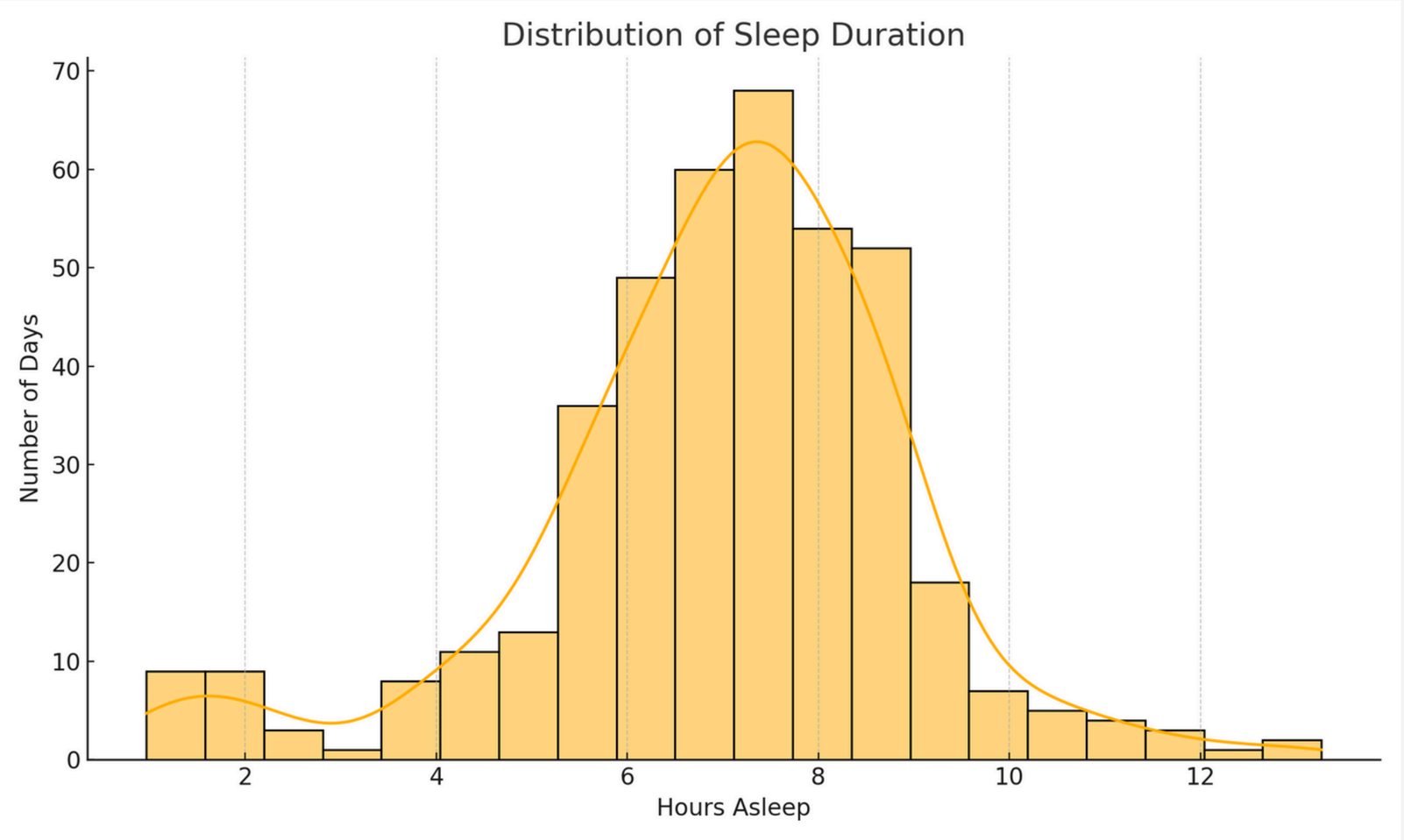
Are We Really Sleeping, or Just in Bed?

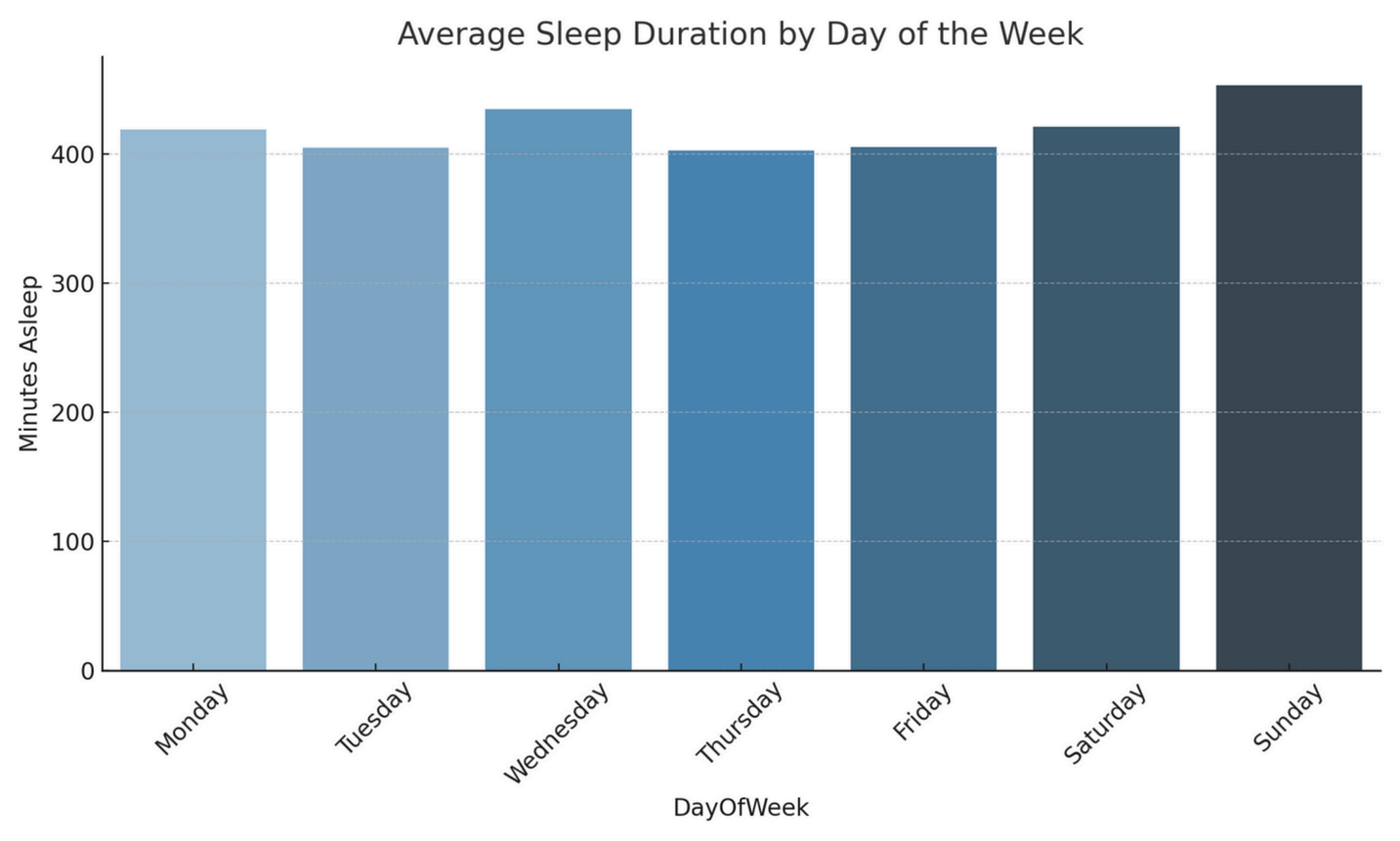


I noticed that time in bed doesn’t always equal time asleep. Thursdays showed the biggest gap—people were in bed longer, but not actually sleeping much more. It made me wonder how stress or habits during the week might be affecting rest.

How Much Are Users Sleeping?

Most users sleep between 5 to 8 hours per night. But there’s a noticeable dip after 8 hours, showing few users hit longer rest. This matters—sleep impacts energy, activity, and health.





How Sleep Shifts Throughout the Week

Sleep hours peaked on Sundays and gradually dropped during the week, hitting a low on Thursdays. It’s clear people catch up on rest before the workweek, then slowly fall behind again. This trend says a lot about our habits —and maybe even our burnout levels.

Sleep Quality vs. Sleep Duration

Even with 400–500 minutes of sleep, not everyone reaches peak efficiency. Sleep quality seems influenced by more than just time in bed.

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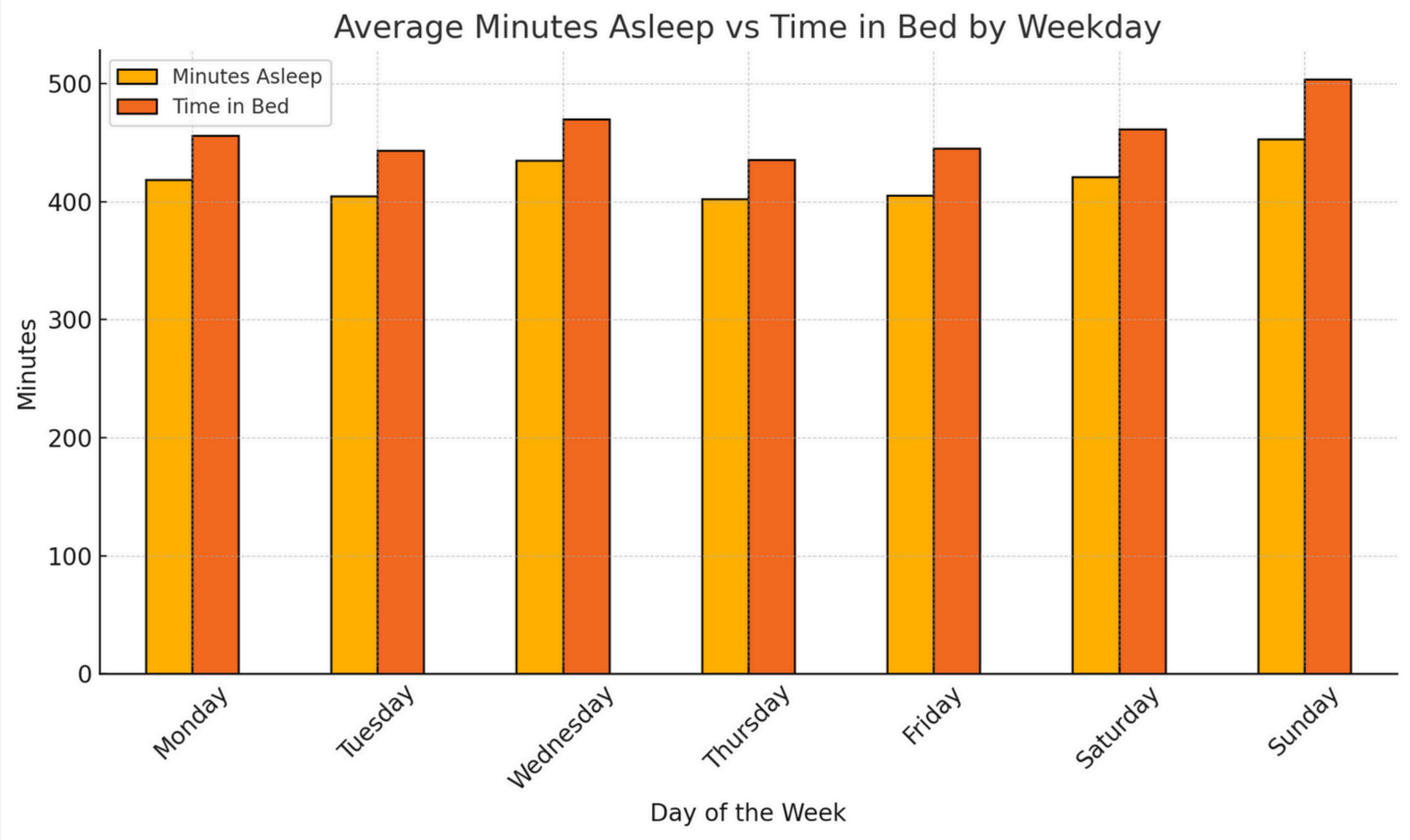
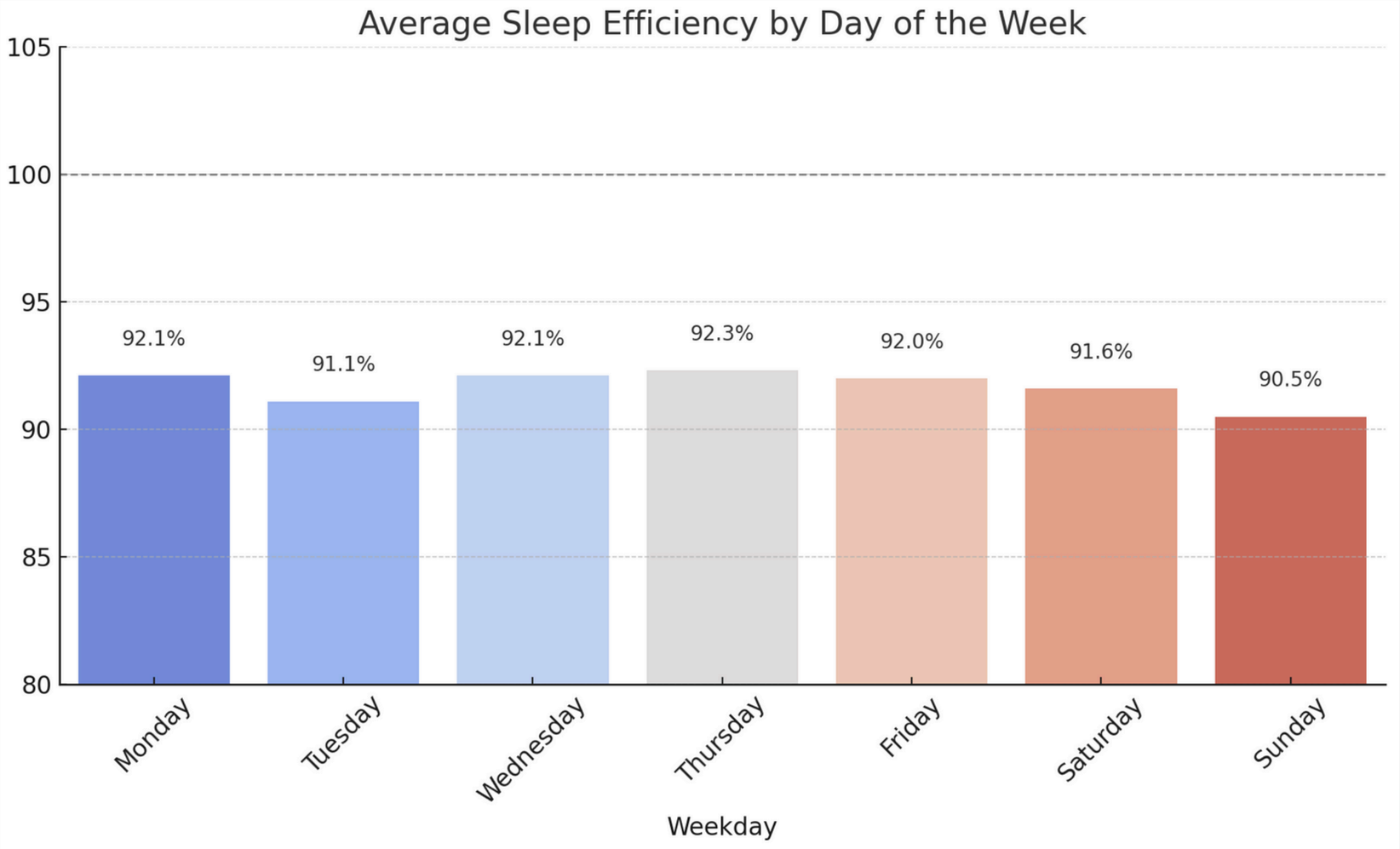
How Long We Stay in Bed vs How Much We Sleep



This data shows a sleep efficiency gap—some days, we stay in bed longer but don't necessarily sleep more. Sunday stands out with lower sleep minutes.

How Efficient Is Sleep Throughout the Week?

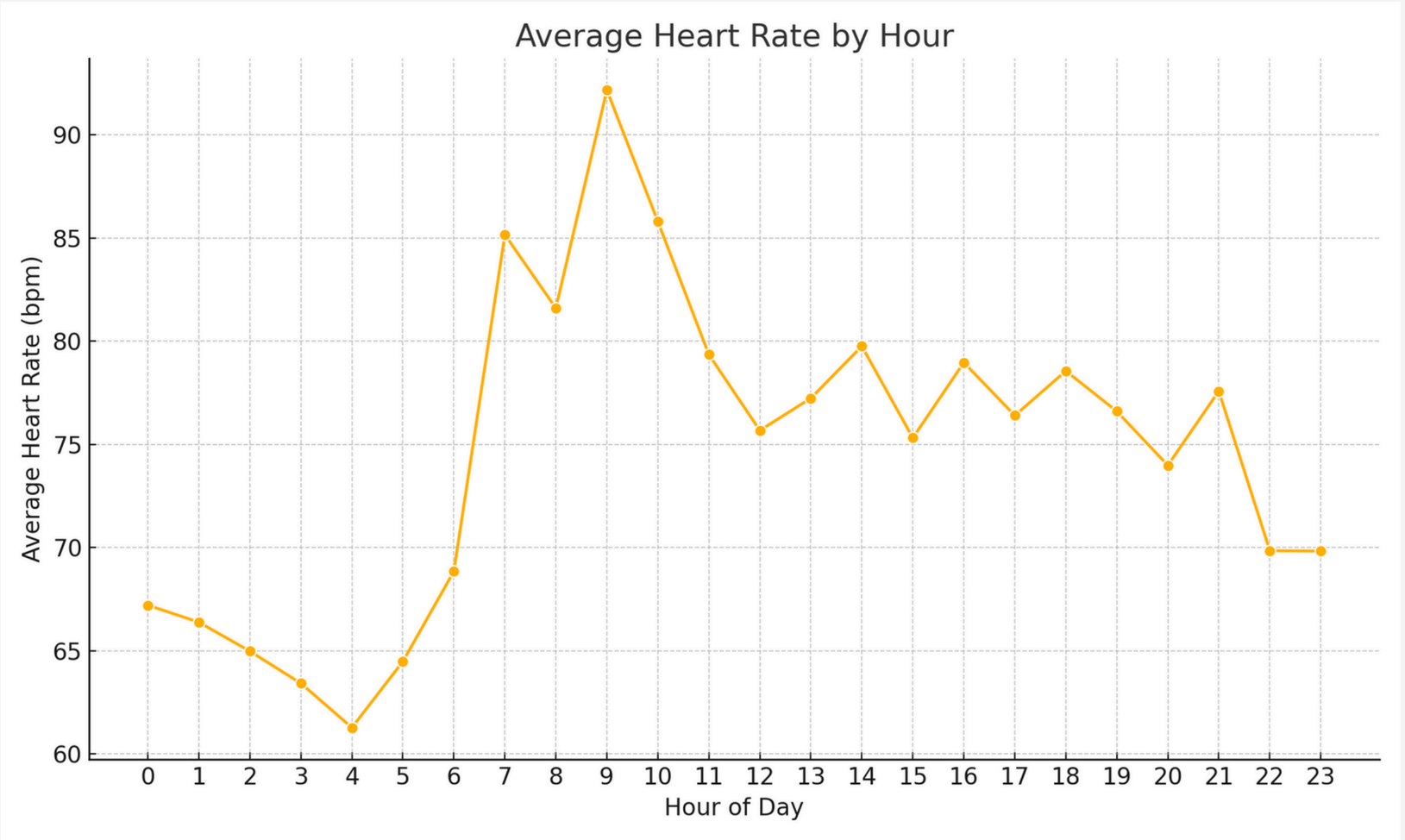
Sleep efficiency peaked on Friday and Saturday, with dips in the middle of the week. This could point to work-related routines or stress affecting rest during weekdays.



Sleep seems to improve as the week winds down. Friday and Saturday stood out, hinting at the impact of free time and lower stress.

Hourly Heart Rate Trends

Most people saw a heart rate peak in the morning and evening. It dips midday—possibly due to rest or low activity.



What Bellabeat Should Focus On

The data shows that some users are burning high amounts of calories with fewer steps — a strong signal to explore non-step activities like cycling or strength training. Bellabeat should also improve how sleep is tracked and communicated, since most users either don’t log sleep or show low sleep efficiency. Finally, trends show people are more active midweek — this insight could fuel personalized reminders that nudge users when they’re most likely to move.

Conclusion & Next Steps

This project gave me a deeper look into how wearable tech captures lifestyle patterns. From steps and calories to sleep and heart rate, the data tells a story—but it’s not always black and white. Numbers alone don’t explain behavior. That’s why my next step would be to expand the dataset—get more users, more timeframes, and more variables. From there, I’d like to explore machine learning to predict user trends and personalize wellness recommendations. This case was just the start.

Let’s Connect

Thank you for taking the time to explore my analysis of Bellabeat’s smart device data. This project reflects my commitment to insight-driven work and my passion for finding solutions through data. I’m excited to keep applying analytics to help businesses make smarter.

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Resource Page

Data Source:
FitBit Fitness Tracker Data (via Mobius)
Distributed by Mobius through Kaggle, under open data license.

Project Case Study:
Google Data Analytics Capstone: Bellabeat Case Study
Provided as part of the Google Data Analytics Certificate on Coursera.

Tools Used

- **R, RStudio**
- **Google Sheets**
- **Canva (for presentation)**