EXPLORING DAILY ACTIVITY DATA WITH PYTHON & EXCEL (FITBIT ANALYSIS)

Steps · Calories · Sedentary
Behavior · Sleep

"Analyzed Fitbit activity data using Python and Excel to uncover daily trends in steps, calories, and activity patterns. Here's what I found!"

by Munawer Jabeen

HIGHLIGHTS OF ANALYSIS

01

- Steps are a good but incomplete predictor of calories: correlation 0.56 shows other variables matter.
- Efficiency varies: average 1.68 calories per step, but most days show lower values → intensity matters more than raw step count.
- Active workout days stand out: high calories with relatively fewer steps = calorie burn through other exercises.
- For fitness goals: Just walking more isn't always enough; higher-intensity activities are more calorie-efficient.10,000 steps ≈ ~160–180 calories (based on trendline).

02

- Likely negative correlation (more sitting → fewer calories).
- Sedentary-heavy days will show baseline calories only (BMR).
- Active days (low sedentary minutes) → much higher calories burned.

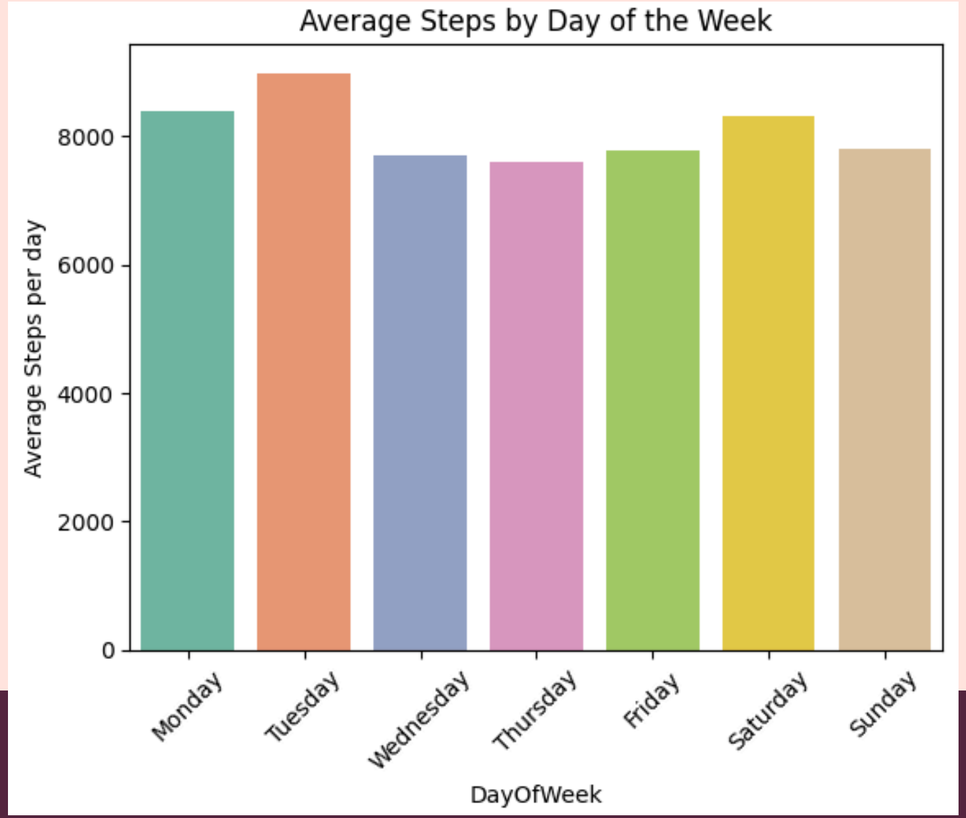
03

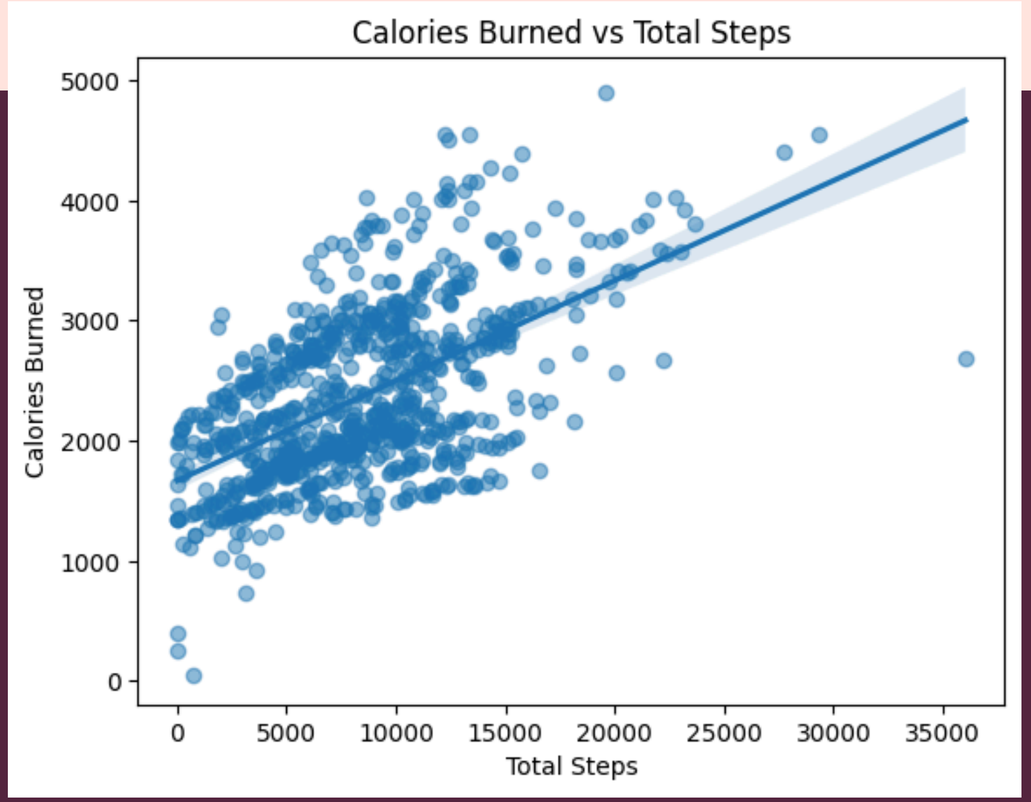
- "Visual comparison shows that on most days, sedentary hours exceed active hours, highlighting the importance of more movement."

KEY VISUALIZATION

Steps by Day of Week (bar chart → shows activity pattern)

- Certain days of the week show higher calorie burn, possibly due to workouts or higher daily movement.



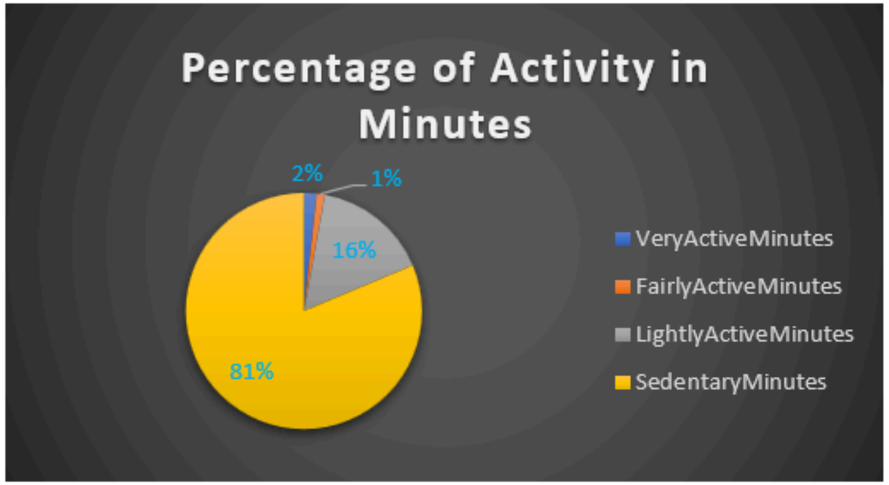


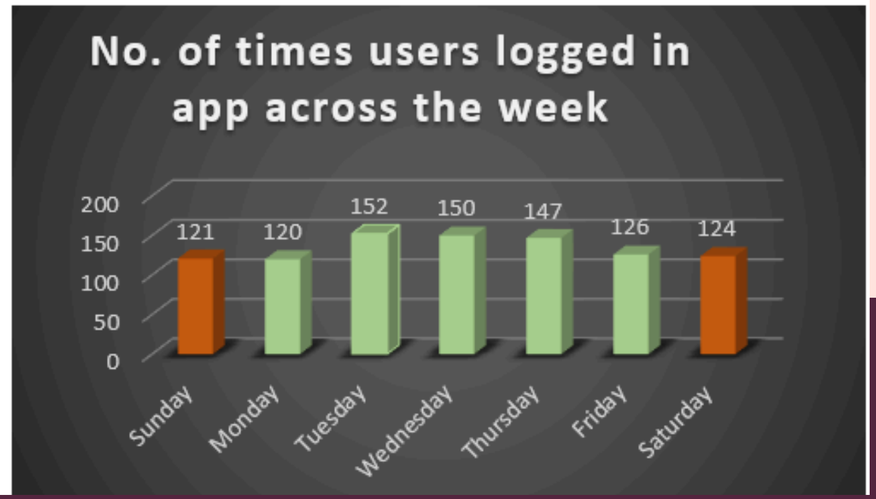
Calories vs Steps (scatter/line → shows positive trend)

- "More steps lead to more calories burned"

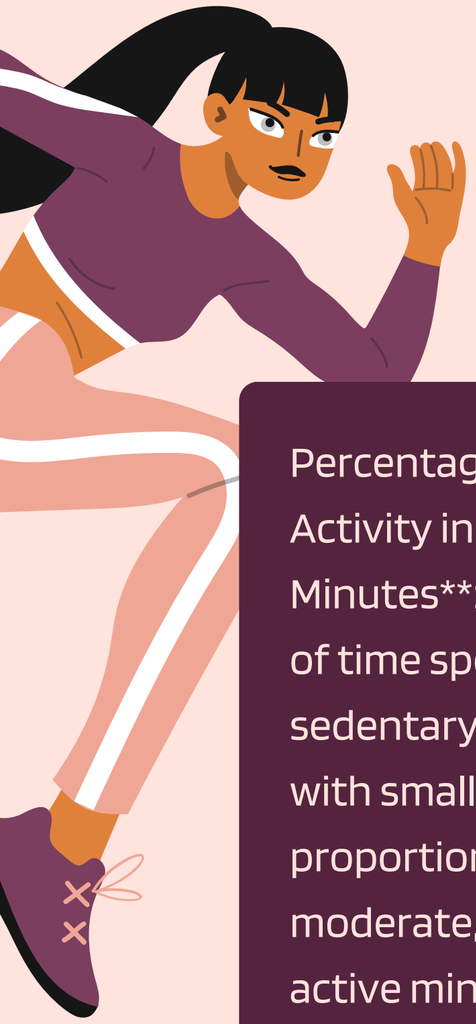
"BUILT IN EXCEL TO COMPLEMENT PYTHON ANALYSIS WITH BUSINESS-STYLE INSIGHTS."

"Fitbit Activity Dashboard – Weekly Insights"





EXCEL DASHBOARD INSIGHTS



Percentage of Activity in Minutes**: Majority of time spent sedentary (81%), with smaller proportions of light, moderate, and very active minutes.

Calories vs Steps Taken**: Positive correlation between steps taken and calories burned.

Calories Burnt per Hour Logged**: Shows fluctuations in energy expenditure per logged hour.

User Login Trends**: Highest engagement mid-week (Tue–Thu), slightly lower on weekends.

CONCLUSION / KEY TAKEAWAY

✅ Staying active throughout the day is more effective than short bursts

✅ Sedentary time strongly affects calorie balance

✅ Daily routines (workdays vs weekends) shape overall health patterns.

CALL TO ACTION

💡 WANT TO SEE THE FULL ANALYSIS, ALL CHARTS, AND DETAILED INSIGHTS?

👉 READ THE FULL PYTHON BLOG ANALYSIS HERE: HTTPS://FITBIT-ACTIVITY-ANALYSIS.BLOGSPOT.COM/2025/09/ANALYZING-DAILY-ACTIVITY-USING-PYTHON.HTML

👉 THIS PRESENTATION COMBINES PYTHON ANALYSIS WITH AN EXCEL DASHBOARD.

#PYTHON #FITBIT #DATAANALYSIS #VISUALIZATION #HEALTHDATA

THANK YOU FOR WATCHING!