DATABASE OVERVIEW

1. Tables

daily_activity: Contains user physical activity logs.

sleep_data: Contains user sleep duration and patterns.

Summary of Data

daily_activity Table Fields:

Column Name	Description
Id	Unique user identifier
ActivityDate	Date of activity
TotalSteps	Total number of steps taken that day
TotalDistance	Total distance walked/run (in miles)
TrackerDistance	Distance recorded by device
LoggedActivitiesDistance	Distance for manually logged activity
VeryActiveDistance	Distance during high activity
ModeratelyActiveDistance	Distance during moderate activity
LightActiveDistance	Distance during light activity
SedentaryActiveDistance	Distance during sedentary behavior
VeryActiveMinutes, FairlyActiveMinutes, LightlyActiveMinutes, SedentaryMinutes	Time spent in different activity levels
Calories	Total calories burned that day

`sleep_data` Table Fields:

Column Name	Description
`Id`	Unique user identifier
`SleepDay`	Date of sleep recording
`TotalSleepRecords`	Number of times user slept (e.g., naps + night)
`TotalMinutesAsleep`	Total minutes of sleep
`TotalTimeInBed`	Total minutes spent in bed(including time of sleep)

Insights

1. Activity Patterns

- High Total Steps and Calories: Users with higher step counts generally burned more calories.
- Very Active Distance correlates strongly with `VeryActiveMinutes`, implying consistent wearable tracking.
- Low LoggedActivitiesDistance: Suggests that most users rely on auto-tracking rather than manual input.

2. Sleep Behavior

- TotalMinutesAsleep < TotalTimeInBed: A consistent pattern, indicating interruptions or difficulty falling asleep.
- Users typically have 1–2 sleep records per day, meaning naps are occasionally logged.

3. Merged Insight (Activity vs. Sleep)

- **Users with higher physical activity (especially VeryActiveMinutes) tend to have:**
    - **Slightly higher sleep duration (TotalMinutesAsleep).**
    - **Better sleep efficiency (minutes asleep vs. minutes in bed).**
- **However, extremely high activity doesn't always equate to better sleep; over-exertion may negatively affect sleep quality.**

Conclusion

Overall Findings:

- **Balanced lifestyle: Users with moderate activity (not extremes) tend to show better rest patterns.**
- **Sleep efficiency: Most users spend ~10–20 minutes awake while in bed, suggesting room for sleep quality improvement.**
- **User engagement: Manual logging (e.g., `LoggedActivitiesDistance`) is minimal — users primarily depend on automatic tracking.**