

# Key findings

## Univariate Analysis of Numerical Columns:

- **Heart Rate:**
  - Distribution is slightly skewed to the right (skewness: 0.347).
  - Most values cluster between 60 and 90 beats per minute, with a gradual decline in frequency as values increase beyond 100.
- **PPGGreen, PPGIR, and PPGRed:**
  - These physiological parameters exhibit distributions with multiple peaks (potential multimodal distributions).
  - The skewness values are low, suggesting near-symmetrical distributions for PPGGreen (0.152) and PPGRed (-0.151).
- **Drowsiness:**
  - The drowsiness parameter also appears slightly skewed to the left (skewness: -0.150).

## ? Scatter Plots:

- There appears to be no strong, clear linear relationship with drowsiness between PPGGreen, PPGRed, and PPGIR.
- The data points are somewhat evenly distributed across the plots, suggesting weak direct associations between these PPG values and drowsiness.

## ? Correlation Heatmap:

- The correlation between **PPGGreen** and **drowsiness** is weakly positive at **0.13**.
- The correlations of **PPGRed** and **PPGIR** with drowsiness are moderately negative at **-0.38** and **-0.41**, respectively.
- This indicates that as PPGRed and PPGIR values increase, there is a moderate tendency for drowsiness levels to decrease.