## Overall goal:

Either (or both):

1. Establishing causality relationships with variables that relate to quality of life, and come up with actionable insights that allow specific actions to be taken.
2. Identifying hidden relationships for the sake of understanding health better.

# Preprocessing:

1. Remove non-main sleep data.
2. Normalize data where needed during comparisons.
3. Aggregate data where needed (like rolling avgs, bins for time of day…)
4. Enumerate google form answers and record a dictionary.

# Objectives:

## Activities:

1. Quantify Hrz\_outofzone\_calories correlation with steps, duration, and activeduration
2. Verify and quantify Heart range zones exponential relationship with fatburn calories.
3. Find out why is hrz cardio minutes < 20 and calories < 80, but has the highest correlation with calories out of all the other zones.
4. Analyze the correlation between activities time and time of waking.
   1. Explore late day activities, gym, walking, class, hang out?
   2. Keep in mind the increase of activities on the weekend.

## HRV, BR, skinTemp:

1. General multivariate correlation analysis between these variables and the main variables among other groups.

## Sleep:

1. Find out if there are correlations between the counts of the cycle levels. Ie. If low amt of light cycles correlate to higher or longer times of rem sleep.
2. Study the 200-300 ~270 day mark. Highlight this in other areas too. Try to find out why the lines between REM and deep crossed around that time period and any other.
3. Uncover reasonings or correlations with higher end sleep scores.
4. Study outliers of revitalization score.
5. Check for common transitions and their correlations with other variables. (n-grams might be helpful)

## Google form:

1. Highlight the days during the google form days and classify them based off the kind of days. (So that we can cross analyze if good/mid/bad days were correlated with other variables). Use statistical tests to verify.

## MyfitnessPlan:

1. Explore basic correlations with other varia bles.

## Stress:

1. Explore low responsiveness correlations with other data.

## All:

1. Outlier study (Activities)
2. Outlier study (HRV, BR, skinTemp)
3. Outlier study (sleep, especially with asleep, wake, and restless cycles, & revitalization score)