# Summary Paper - DSC530 Final Project - Jaimie Cain

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I set out to see if there was correlation between how many steps a Participant had during the day to how much sleep they had and how much weight they lost. The popular opinion is that exercise allows the Participant to get better rest due to the energy expenditure and should also reduce the Participants weight due to the additional calories being burned. I had a total of three data sets that contained the Total Steps, Total Distance, WeightPounds, Total Minutes Asleep and the common factors between the data sets are the Date and Participant ID.

The histograms for each variable show a fairly normal distribution with only the weight and BMI having a strong outlier. There were a lot less data points on the weight and BMI dataset due to the Participant's not weighing in each day but instead had weekly weigh-ins. The PMF analysis shows a normal curve for the Total Minutes Asleep but the Total Steps produce a straight line with no slope. The CDF analysis of Total Steps and Total Minutes Asleep show great linearity with a slightly steeper slope on the Sleep CDF. Due to issues with the time series of the Calories and Steps being logged daily versus the WeightPounds being logged weekly, it caused a lot of skew in my analysis and exaggerated the correlation. In the future I would have copied the weekly values across the entire week and then the analysis would have introduces less skew.