**Assignment6**

**Dataset: WorldRecords.csv**

Every four years, track and field athletes take the world stage at the Summer Olympics.  Some of the most exciting events during each Olympics are those in which athletes push the limits of their sport, breaking their own personal best records, national records, or even world records.  We have compiled the world record times for track events like the 100m dash and record distances for field events like the shotput into a single dataset.  This dataset includes information on the person who broke the record, his/her nationality, where the record was broken, and the year it was broken.  Note that not all world records are broken during the Olympics, with many occurring in regional or national competitions.

**Research Question**

How have the world record times for the men's and the women’s mile event changed over the years?

**Conclusion**

Based on scatterplots of the men’s and women’s world record mile event, both of these events follow a strong,    relationship over time. For both groups, the assumption of linearity appears to be satisﬁed. The men’s world record mile time decreases by an average of    seconds per year, while the women's record distance decreases by an average  seconds per year. Because the  estimate is the value of the record time when year is equal to 0, it is not interpretable in the context of the problem. Both linear models ﬁt the data well, with R-squared values for the men's and women's models equal to   and   respectively. For the men's world record, 97.7% of the    is explained by the linear model of year, while for the female world record, 89.6% of the   

in performance can be explained by the linear model of year.