PSQF 7375 Homework 1: Make Friends with R (15 points)
Due 1 Feb 2019 by 11:59 PM via email (R syntax file only)
Please name your .R file as follows: Firstname_Lastname_HW1.R

You have been given two datasets from a study examining the relationships among marital satisfaction and career satisfaction across 4 occasions in different-sex couples. Time 2 was collected at 3 months, Time 3 at 12 months, and Time 4 at 24 months. You have been given two datasets, each in multivariate format. The first dataset is *husband.sav* (SPSS data file) and contains the following:

FamilyID: family ID number
WedTime: how long couple had been married at start of study
HMarSat1 – HMarSat4: husband's marital satisfaction at each of 4 occasions
HCarSat1 – HcarSat4: husband's career satisfaction at each of 4 occasions
HAge1 – HAge4: husband's age at each of 4 occasions

The second dataset is called *wife.csv* (comma delimited file) and has the same variables but with a "w" in front for marsat, carsat, and age.

Your task is to generate the syntax in R to do the following. Questions 1-7 are two points. All others are .5 poinst. **Use comments at each step—these instructions can be copied in as comments to do so.**

1. Import both files into R, assigning the R data frames names of "Husbands" (for the data in Husbands.sav; note the capitalization) and "Wives" (for the data in Wives.csv; note the capitalization). For the SPSS file, use the foreign library and the read.spss() function. For the CSV file, use the read.csv() function in base R. (2 points)

2. Merge both files together by FamilyID (sort by FamilyID first) into a dataset called "FamilyWide". Use the merge function in base R and make the argument "x" be Husbands and "y" be Wives. (2 points)

3. Create a **single stacked data frame** called "FamilyLong" with six new variables: husband martial satisfaction, husband career satisfaction, husband age, wife martial satisfaction, wife career satisfaction, and wife age. Use the stem of the variable name as the new stacked variable name. **Then create a sequential index (ranging from 1-4) called "occasion", and create a second index for time in years since Time 1 called "year" (using actual years passed, as given above). Use the MultiWide2Long function in the EPSY905R package. (2 points)**

4. Create descriptive statistics using the describe() function of the psych package for each variable in (1) the wide-format FamilyWide and (2) long-format FamilyLong data sets. Save (1) as an object named DescriptivesFW and (2) as an object named DescriptivesFL. (2 points)

5. Create descriptive statistics for each variable in FamilyLong at each time point (1, 2, 3, and 4) using the describeBy() function of the psych package. Save the result as an object named DescriptivesFLTime. (2 points)

6. Then **create two new variables** in in the FamilyLong data frame where the overall sample mean age (from DescriptivesFS) is subtracted from the original age variable for each (i.e., called HAge_c for husbands and WAge_c for wives). Name the new data frame FamilyLong2. (2 points)

7. Also **create a new categorical variable** in the FamilyLong2 data frame that rounds age into rounded 10-year intervals for both husbands (HAge_r) and wives (WAge_r). Name the new data frame FamilyLong3. (2 points)

8. Install R Studio (.5 points)

9. Install JAGS (.5 points)