**Statement of the Problems:**

1. Build a model that predicts household income based on a subset of the features available in the file ‘DEMO\_I.csv’.  Consider the typical steps involved in predictive modeling: Data Preparation and Exploration, Feature Engineering, Model Development and Validation, and Model Interpretation. Consider the fact that the income provided is Household Income though the records are at the individual person level. Clearly present the quality of the model. You can choose the algorithm(s) and evaluation metric(s) as you deem appropriate.
2. Develop a model to predict Body Mass Index (BMI). As independent predictor variables ***Use the demographic data from the previous part of the test (above)***. Focus on the **interpretability** of your findings as well model performance. The target variable for this problem can be found in the file ‘BMX\_I.csv’. You may choose the form &/or algorithm(s) for presenting the model’s interpretation or explanation as you deem appropriate.

The enclosed files contain data from the 2015-2016 National Health and Nutrition Examination Survey (NHANES) study from the Centers for Disease Control and Prevention (CDC):

* DEMO\_I.csv: demographic information concerning the respondents
* BMX\_I.csv: body measure information on the respondents
* DEMO\_I.pdf: description of the ‘DEMO\_I.csv’ data set.
* BMX\_I.pdf: description of the ‘BMX\_I.csv’ data set

Note: You do not need to bring in any other data for this assignment.

Please submit your code along with a clear summary of your findings, including evidence for the decisions you made and your recommendations. We as interested in your thought processes as we are in your outcomes, so feel free to express your creativity. Include your code & any appropriate visualizations pertaining to the model development process. A good way to show your work is in the form of a notebook (e.g. Jupyter if you use Python, R-Studio / Markdown, etc..).

You have exactly 1 week to complete this test and the expected effort should be between 7-15 hours in total.