Group 3

Oliver, Kayla, Abdulmateen

We are going to focus our project on developing a machine learning algorithm to predict the presence of autism based on responses to an Autism Spectrum Quotient (ASQ) test (a 10-point yes/no questionnaire) as well as demographic and birth information. This project will use data found on [Kaggle](https://www.kaggle.com/competitions/autism-prediction/data) and associated with a data analytics competition sponsored by Google which concluded a year ago.

Currently, medical autism testing requires specifically trained specialists which often forces families and individuals to travel long distances and stay in hotels for weeks while testing takes place. The testing itself also costs thousands of dollars and can be a grueling experience.

By using an online 10-point questionnaire and entering personal and birth information into this type of machine-learning algorithm, parents and individuals can gain insight into the likelihood that autism is present in an individual, and this can better inform the decision to take the steps to seek a medical diagnostic exam.

We will use Logistic Regression and Neural Network Modeling with Resampling and Keras-tuner and will analyze the complete dataset as well as datasets that only include the ASQ information and the Unweighted Autism Spectrum Quotient information. This will allow us to generate the best possible predictive model, but also to determine the effectiveness of one generated from only the ASQ response set, as well as to determine if the weighting adds additional information that benefits the predictive neural network model. We will model the dataset in Tableau as well as the outcomes of our models.