Neural Network Homework Report

**Overview:**

As a member of a nonprofit foundation Alphabet Soup I was tasked to create a neural network tool use a dataset to help select applicants with the best chance of success in their futures. Using my knowledge of Machine Learning, Neural Networks, Pandas, Binary Classifier I was able to help my foundation in predicting the best applicants from the dataset.

**Results:**

* **Data Preprocessing**

First, I dropped EIN and NAME columns to begin cleaning my data. Following that I found the number of unique values for each column, I picked a cutoff point to bin “rare” categorical variables, and then converted all categorical variables to quantitative variables. Variables I targeted was Classification and application type.

* **Compiling, Training, and Evaluating the model**

I chose 2 hidden layers and an output layer for my neural network model and selected 150 for the number of Epoch. I chose 150 because I wanted the most accurate model and the accuracy for my model is 0.73. Steps I took to increase the accuracy was mainly increasing epoch numbers. I did not reach the target accuracy of 75% however I believe with my model it is achievable by tweaking the input data.

**Results:**

My results include an accuracy of 0.73. I found that increasing the input allows the model to become more accurate. Another way to solve this classification model is to continue increasing the epoch levels so that the model becomes more accurate.