Charity Funding Predictor Report

# Overview

The purpose of this analysis is to create an algorithm for Alphabet Soup foundation that can predict whether or not applicants for funding will be successful.

# Results

 Data Preprocessing

* What variable(s) are considered the target(s) for your model?
  + The target of the model was if the applicants were successful which was listed in column “IS\_SUCCESSFUL”
* What variable(s) are considered to be the features for your model?
  + All columns except for EIN, NAME and IS\_SUCCESSFUL were considered as features for the model except for last attempt to boost, which only included APPLICATION\_TYPE and CLASSIFICATION columns.
* What variable(s) are neither targets nor features, and should be removed from the input data?
  + The columns EIN and NAME were removed from the data since they did not add any values.

 Compiling, Training, and Evaluating the Model

* How many neurons, layers, and activation functions did you select for your neural network model, and why?
  + The initial model had 3 layers including output layer and the last model had 5 layers including output layer. They both used mix of ReLU and sigmoid in attempt to improve accuracy
* Were you able to achieve the target model performance?
  + The goal of the model was to achieve over 75% accuracy, but this model could only achieve 72.5% accuracy
* What steps did you take to try and increase model performance?
  + In attempts to increase the model performance, more layers were added with various activation functions and cleaned data to exclude applicant types and classifications marked as ‘other’.

# Summary

In summary, with the current model, we can accurately predict the success rate at over 70%. Since the label we used were ‘yes’ or ‘no’, the binary classification would work best for this data.