**Overview:**

The purpose of this analysis is to create a tool to predict applicants for funding who have the best chance of succeeding in their ventures.

**Results:**

Data Preprocessing

* What variable(s) are the target(s) for your model?

The target variable is the “IS\_SUCCESSFUL” variable which indicates whether the venture was successful

* What variable(s) are the features for your model?

The feature variables were STATUS, INCOME\_AMT, APPLICATION\_TYPE, CLASSIFICATION, ASK\_AMT, and SPECIAL\_CONSIDERATIONS

* What variable(s) should be removed from the input data because they are neither targets nor features?

The variables that should be removed are EIN, and NAME, since these are not target or feature variables

Compiling, Training, and Evaluating the Model

* How many neurons, layers, and activation functions did you select for your neural network model, and why?

I used two. I tried experimenting with up to 5 layers but there was no noticeable shift in performance so I settled on 2 layers. The first layer has 120 nodes and the second layer has 80 nodes. I decided on this number because I read it was recommended for each subsequent not to be 2/3 the size of the previous layer.

* Were you able to achieve the target model performance?

I was unable to reach the 75% performance requirements. After testing numerous different combinations of layers and nodes my accuracy score constantly fell around 74%

* What steps did you take in your attempts to increase model performance?

To attempt and improve the accuracy of my model I tried adding more application types and classification variables to the data frame by including those with lower value counts than the original model. I also tried different combinations of nodes and layers

**Summary:**

Overall both models failed to achieve 75% accuracy. A recommendation for how to improve the accuracy is to use a larger dataset if available. We could also further experiment with different amounts of nodes and layers.