1. **Overview** of the analysis: Explain the purpose of this analysis.

The nonprofit foundation Alphabet soup provides funding for ventures from organizations based on their application. Their business team has provided a CSV with more than 34K organizations that have received funding from Alphabet soup over the years. They have asked for a model to help predict whether applicants will be successful if funded.

This analysis is to help explain the model’s accuracy and predictions.

1. **Results**: Using bulleted lists and images to support your answers, address the following questions:

**Data Preprocessing**

* What variable(s) are the target(s) for your model?
  + IS\_SUCCESSFUL
* What variable(s) are the features for your model?
  + APPLICATION\_TYPE, AFFILIATION, CLASSIFICATION, USE\_CASE, ORGANIZATION, STATUS, INCOME\_AMT, SPECIAL\_CONSIDERATIONS, ASK\_AMT
* What variable(s) should be removed from the input data because they are neither targets nor features?
  + EIN and NAME, neither variables assisted in predicting a successful outcome.

**Compiling, Training, and Evaluating the Model**

* How many neurons, layers, and activation functions did you select for your neural network model, and why?
  + A high count of neurons would lead to overfitting, however, previous tests with lower amounts of neurons (121 and 225) showed similar yet lower points of accuracy.
* Total Neurons: 449

o Input Layer

o First Hidden Layer: 256 neurons with relu function.

o Second Hidden Layer:128 neurons with relu function.

o Third Hidden Layer: 64 neurons with relu function.

o Output Layer: 1 neuron with sigmoid function.

* Were you able to achieve the target model performance?
  + Model performance was unsatisfactory, with an accuracy rating of 0.7311 and a loss of 0.5561
* What steps did you take in your attempts to increase model performance?
  + I tried increasing my neuron count 906 (512, 256, 128, 1), but was only met with a minor accuracy increase to 0.7312.
  + I have also reduced my neuron count 225 (128, 64, 32, 1), but was only met with a minor accuracy decrease of 0.7283.

1. **Summary**: Summarize the overall results of the deep learning model. Include a recommendation for how a different model could solve this classification problem, and then explain your recommendation.

In summary, the model’s accuracy falls short of expectations. The accuracy rating is 73.11%, which is slightly under the goal of 75% accuracy. While still being better than a flip of a coin (50%), my model has a relatively high loss rate of .5561. Meaning that that computational error had played a factor and could be improved upon in the code.

A suggestion to help shape the model further is potentially scaling the data properly with a scalar to help with performance.