**Alphabet Soup Neural Network Model Analysis**

**Overview**

The purpose of this analysis is to evaluate the accuracy of the model built to predict the applicants that would yield the most successful ventures.

**Results**

* **Data Preprocessing**
  + What variable(s) are the target(s) for your model?
    - The target for the model is the feature “IS\_SUCCESSFUL”, which identifies as a binary value whether a venture was ultimately successful.
  + What variable(s) are the features for your model?
    - During 3 separate attempts, I targeted the application type, classification, income amounts, and ask amounts.
  + What variable(s) should be removed from the input data because they are neither targets nor features?
    - Special Considerations and Status can be removed as they do not appear to provide any meaningful information that could be used to train our model.
* **Compiling, Training, and Evaluating the Model**
  + How many neurons, layers, and activation functions did you select for your neural network model, and why?
    - Neurons:
      * 2; I selected 2 neurons since my model is meant to be a classifier.
    - Layers:
      * 2 hidden layers; Typically, a single hidden layer can address a large majority of cases. I chose a 2nd layer to further enhance the performance of my model.
    - Activation Functions:
      * ReLu and Sigmoid; I used the sigmoid function for the final output layer as this model was meant to be a binary classifier (determining whether a venture would or would not be successful). My first hidden layer utilized the ReLU function, since the data we are using to train the model is positive and non-linear.
  + Were you able to achieve the target model performance?
    - While I was not able to achieve an accuracy score of 75%, I was able to get to an accuracy level of 72.8%.
  + What steps did you take in your attempts to increase model performance?
    - For the first 2 attempts, I played around with binning various features that I identified as potentially significant. During my final attempt, I attempted to increase the number of epochs to see if that would improve the training outcome.

**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.*