1. **Overview** of the analysis: Explain the purpose of this analysis.
2. **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?
  + What variable(s) are the features for your model?
  + What variable(s) should be removed from the input data because they are neither targets nor features?
* Compiling, Training, and Evaluating the Model
  + How many neurons, layers, and activation functions did you select for your neural network model, and why?
  + Were you able to achieve the target model performance?
  + What steps did you take in your attempts to increase model performance?

**3Summary**: 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.

Deep Learning Challenge

This deep learning challenge is for a non-profit foundation, Alphabet Soup, to determine to which applicants they should provide the funding. The CSV file contains historical data of organizations which have received fundings from Alphabet Soup, including name of the organizations, application type, affiliated sector of industry, government organization classification, use case for funding, organization type, active status, income classification, any special aspects to consider for application, funding amount, and finally whether the applicant was successful or not. With machine learning and neural networks, we set up a model and made it to predict future applicants.

First model, saved under AlphabetSoupCharity.ipynb file, shows a binary classification model to predict which organization will be successful. In order to do this, we first dropped 'EIN' and 'NAME' columns. Next, we have created binning for application type and classification to prepare the data and make the "rare" categorical variables into a new value "other." Then we separated the target array, y, which was the column IS\_SUCCESSFUL' in this case, and the features array, X. After we have trained and tested the features, we compiled and trained the model. In order to do this, we had two hidden layers, with 80 and 30 neurons, respectively, and used the "relu" function. Then we had the "sigmoid" function with 1 node as the outer layer to create binary classifier model. As a result, the accuracy of this model came out to be 72.5%.