**Step 4: Write a Report on the Neural Network Model**

For this part of the assignment, you’ll write a report on the performance of the deep learning model you created for Alphabet Soup.

The report should contain the following:

1. **Overview** of the analysis: Explain the purpose of this analysis.
   * The purpose of this analysis is to help the nonprofit foundation Alphabet Soup create a tool that can help them select the applicants for funding with the best chance of success in their ventures.
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?
  + 'IS\_SUCCESSFUL' is the targeted column for this model.
  + What variable(s) are the features for your model?
  + All other columns in the DataFrame are the feature variables.
  + What variable(s) should be removed from the input data because they are neither targets nor features?
  + Both ‘EIN’ and ‘NAME’ columns were dropped because they were not necessary for the dataset
* 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 80 hidden\_nodes\_layer1 and 30 hidden\_nodes\_layer2. I used these numbers because the starter code showed them in the expected outcome for the ‘Define the Model’ cell, so I assumed they would give me the required outcome.
  + Were you able to achieve the target model performance?
  + I was not able to achieve the target model performance. I made several changes to the model and even with help from AskBCS and TA’s, we were not able to hit the target.
  + What steps did you take in your attempts to increase model performance?
  + I removed the ‘ASK\_AMT’ column, I added 4 more hidden layers, I conducted outside research and changed the Activations for my layers. The final cell of my model does not show all the different methods I took in order to try and achieve the asked for optimization but all the methods I tried failed to hit the accuracy score of 75%.

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.
   * My deep learning model had an overall accuracy of about 73%. I believe that in order to improve the deep learning model in the future more data and cleaner data would be required. If data that showed a greater difference between successful and unsuccessful ventures was obtained it would give a new model a greater chance at finding a pattern to be more accurate. This would give a future model a better chance at determining which ventures would be successful ventures.