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

The report should contain the following:

1. **Overview** of the analysis: Explain the purpose of this analysis.
   * **The purpose of this analysis is to try and predict for the non-profit foundation Alphabet Soup, whether funding an applicant will be successful or not.**
2. **Results**: Using bulleted lists and images to support your answers, address the following questions.

* Data Preprocessing
  + What variable(s) are considered the target(s) for your model?
    - **The target for our model is going to be the column “IS\_SUCCESSFUL”**
  + What variable(s) are the features for your model?
    - **The features of my model are the columns:**
      * **Application\_Type**
      * **Affiliation**
      * **Classification**
      * **Use\_Case**
      * **Organization**
      * **Status**
      * **Income\_amt**
      * **Special\_considerations**
      * **Ask\_amt**
  + What variable(s) are neither targets nor features, and should be removed from the input data?
    - **There were 2 columns removed from the features because they are identification columns.**
* Compiling, Training, and Evaluating the Model
  + How many neurons, layers, and activation functions did you select for your neural network model, and why?
    - **For my neural network model I started out with 2 hidden layers, both being relu activation. The first hidden layer had 80 units followed by the second layer having 30 units. The final output layer has 1 unit and it has sigmoid activation.**
  + Were you able to achieve the target model performance?
    - **I was unable to reach the target performance of 75% accuracy with these layers. I achieved 72.4% accuracy.**
  + What steps did you take to try and increase model performance?
    - **I used 2 methods to try and increase the accuracy of my model. The first method I tried was a function that automatically creates a model with various layers and activations and neurons to try and determine the best possible parameters. Using keras\_tuner I was still only able to achieve an accuracy score of 72.8%**
    - **The second method I used was trying to manually alter my model. I used 3 different methods including changing the activation, changing the number of layers, and changing the number of epochs used.**

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 explain your recommendation.

* Overall, I have created a deep learning model that is about 72% accurate in determining whether an application for funding will be successful or not. My recommendation for a different model could possible be feature selection or DBSCAN. I recommended feature selection because you could possible run that before you run your neural network model to determine which features are important and carry the most weight. On top of that, DBSCAN is great for classification problems such as this.