**Data Preprocessing**

What variable(s) are considered the target for your model?

* The model target is the **Is-Successful** column.

What variable(s) are considered to be the features for your model?

* NAME, APPLICATION, TYPE, AFFILIATION, CLASSIFICATION, USE\_CASE, ORGANIZATION, INCOME\_AMT,SPECIAL\_CONSIDERATIONS, STATUS, ASK\_AMT (excluding EIN)

What variable(s) are neither and should be removed from the input data?

* EIN is not significant and should be dropped.

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

How many neurons, layers, and activation functions did you select for your neural network model, and why?

* There were 3 hidden layers with 100, 50, 30 neurons, respectively. I utilized the relu activation function for the first hidden layer and then utilized the sigmoid activation function for the other 2 hidden layers and the output layer.

Were you able to achieve the target model performance?

* Yes. I reached around 79%.

What steps did you take to try and increase model performance?

* Including the name category, adding another hidden layer, and switching most of the activation functions to sigmoid assisted the most in increasing model performance.

**Summary**

* Through increasing the accuracy score to around 79%, we are able to classify each of the test data points around 79% of the time. A funding applicant has around a 81% chance of being successful with criterias such as, the **name** appears more than 5 times, **application type** is: T3, T4, T5, T6, T7, T8, T10, T19, **classification type** is: C1000, C2000, C3000, C1200, C2100. The other categories were not changed. A good model to recommend is the XGBoost model because XGBoost produced a 78% accuracy, higher than the Random Forest model.