Purpose of Analysis:

The purpose of this analysis is to develop a predictive model that can assess the probability of success for funding applications submitted by charitable organizations. The analysis utilizes machine learning techniques to construct a model capable of classifying whether a given application will be successful or unsuccessful.

Data Preprocessing:

**Target Variable:**

- The target variable for the model is "IS\_SUCCESSFUL." This variable indicates whether a charitable organization's application for funding was successful (1) or not (0).

**Features:**

- All the remaining variables in the dataset, except for "IS\_SUCCESSFUL," are considered features for the model. These features are used to predict the success of charitable applications.

**Variables Removed:**

- The following variables have been removed from the input data because they are neither targets nor features:

- 'EIN': This is an identification number and does not provide meaningful information for prediction.

- 'NAME': The name of the organization is also not relevant for predicting application success and has been removed.

Compiling, Training, and Evaluating the Model

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

In the first attempt, I used 9 hidden\_nodes\_layer1 and 18 hidden\_nodes\_layer2

**Were you able to achieve the target model performance?**

I was not able to achieve the 75% model accuracy

**What steps did you take in your attempts to increase model performance?**

I tried three times using three layers.

**Summary**

In the three attempts I made, the model was unable to achieve a target predictive accuracy higher than 72.8%. Hyper tuning resulted in virtually no improvement. I would consider using another classification model to see if it is better at predicting whether applicants will be successful if we use Alphabet Soup.