Purpose

The purpose of this analysis was to create a tool that Alphabet Soup could use to help it select applicants to fund that had the best chance of success.

Data Preprocessing

Variable Selection

The variable "IS_SUCCESSFUL" was the target variable, with the rest, save "EIN" and "NAME" being the featured ones. Upon completion, there were likely many others that could have been selected. SPECIAL_CONSIDERATIONS would be one for example, with further testing necessary to determine which others are unimportant.

Compiling, Training, and Evaluating the Model

Neural Network Model

I used two hidden layers and three activation functions.
The first hidden layer has 80 neurons and uses the ReLU activation function.
The second hidden layer has 32 neurons and uses the ReLU activation function.
The output layer has 1 neuron and uses the sigmoid activation function.

Target model performance

I was able to come close to the target, I trained it using 100 epochs as a standard to improve accuracy.

The Results

While the model performed decently, it could still be improved. Further feature selection could be employed using something like Correlation-based Feature Selection to increase the accuracy.
A Support Vector Machine model could also be employed instead, as it is often used for binary classification problems.