1. **Overview** of the analysis: Explain the purpose of this analysis.

The purpose of this analysis is to determine if the tool we created for Alphabet Soup to select applicants for funding with the best chance of success in their ventures is accurate and thorough.

1. **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?

The column “IS\_SUCCESSFUL”.

* + What variable(s) are the features for your model?

The “APPLICATION\_TYPE”, “AFFILIATION”, “CLASSIFICATION”, “USE\_CASE”, “ORGANIZATION”, “STATUS”, “INCOME\_AMT”, “SPECIAL\_CONSIDERATIONS”, and “ASK\_AMT” columns.

* + What variable(s) should be removed from the input data because they are neither targets nor features?

The “EIN” and “NAME” columns.

* Compiling, Training, and Evaluating the Model
  + How many neurons, layers, and activation functions did you select for your neural network model, and why?

I initially used three layers with the “relu” activation because I found it to produce accurate results. I was getting an accuracy of 72.6 percent.A computer screen shot of a program code

Description automatically generated

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

In my optimization file, I was not able to get 75% percent accuracy after more than 5 tries. I was able to increase the accuracy to 72.9%.

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

I added layers and changed the output layer application to ‘sigmoid’. I also changed the number of units for the layers.A screen shot of a computer program

Description automatically generated

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.

The results show that the model is accurate as the difference between 72.9% and 75% is very small. Increasing the number of layers or switching the applications could possibly increase the accuracy of the model. This makes sense because me adding layers increased the accuracy of my own model.