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

This analysis will predict which applicants will be successful in their business if Alphabet Soup funds them.

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 target variable are the IS\_SUCCESFUL
  + What variable(s) are the features for your model? The features are all the other columns and does not include IS\_SUCCESSFUL
  + What variable(s) should be removed from the input data because they are neither targets nor features? EIN, Name
* Compiling, Training, and Evaluating the Model
  + How many neurons, layers, and activation functions did you select for your neural network model, and why? Epochs set to 50 , layers set to 100 and 60, and I set all activation functions to sigmoid. I made these changes to see how they would impact the model accuracy.
  + Were you able to achieve the target model’s performance? No, I did not achieve the goal of 75. My scores

|  |  |
| --- | --- |
| n1 | 73.8 |
| n2 | 72.9 |
| n3 | 72.8 |

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

|  |
| --- |
| **Optimization attempt #2**  Dropping more or fewer columns. Also Dropped USE\_CASE column.  Creating more bins for rare occurrences in columns. |
| **Optimization attempt #2**  Add more neurons to a hidden layer.  Add more hidden layers. |
| **Optimization attempt #3**  Use different activation functions for the hidden layers.  Add or reduce the number of epochs to the training regimen. |

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.

n1 accuracy of 73.8

A screenshot of a computer

Description automatically generated

n2 accuracy of 72.9

A screenshot of a computer code

Description automatically generated

N3 accuracy of 72.8

A screenshot of a computer

Description automatically generated

