Report of Neural Network Model

Overview:

The purpose of this analysis was to analyze a dataset of over 34,000 organizations that have received funding from the non-profit foundation Alphabet Soup. The foundation wanted to create an algorithm to predict whether applicants for funding would be successful.

Results:

* Data Preprocessing
  + The target of the model was the “IS\_SUCCESSFUL” data
  + The features of the model were the “APPLICATION\_TYPE, AFFILIATION, CLASSIFICATION, USE\_CASE, ORGANIZATION, STATUS, INCOME\_AMT, SPECIAL\_CONSIDERATIONS, ASK\_AMT” data
  + The “EIN, NAME” data was neither a target nor a feature and was removed from the input data.
* Compiling, Training, and Evaluating the Model
  + I applied a three-layer model. The number of hidden nodes was changed in each optimization model to see if they changed the accuracy and how they affected accuracy.
    - In the first model, 981 params were created and the accuracy was 74%
      * Graphical user interface, text

        Description automatically generated
    - In the second model, 713 params were created and the accuracy was 73%
      * Graphical user interface, text

        Description automatically generated 
    - In the second model, 451 params were created and the accuracy was 74%
      * Graphical user interface, text

        Description automatically generated 
  + I was unable to achieve the 75% model performance
  + To increase model performance, I played with the binning values and the number of hidden nodes.

Summary:

The overall results did not meet the 75% threshold, but in each optimization the accuracy changed. Continuing to adjust the model may all the results to meet the threshold.