**REPORT ON NEURAL NETWORK**

***Overview***

We were asked by Alphabet Soup to develop an algorithm that will aid them in determining whether applicants will be approved for funding by creating a binary classifier with machine learning and neural networks using the dataset's provided by Alphabet Soup.

**A screenshot of a computer screen

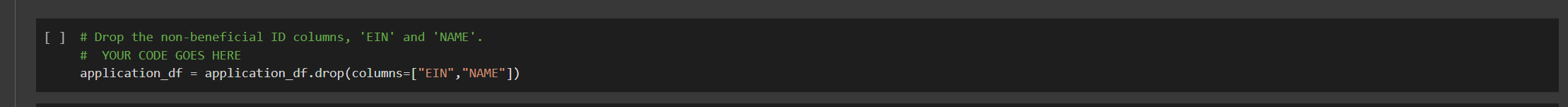
Description automatically generated with medium confidence**

**Results**

**Data Pre-processing**

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

**For my First optimization**, I first started by removing any unnecessary columns from the data like, “EIN” and “NAME” columns from the data set. This because these columns weren’t target nor relevant to the training model.



The target variable was labelled as “IS\_SUCCESSFUL”. I have used “APPLICATION\_TYPE” for analysis and “CLASSIFICATION” for binning.

Background pattern

Description automatically generated

Graphical user interface, text

Description automatically generated

The target variable was labelled as “IS\_SUCCESSFUL”. I have used “APPLICATION\_TYPE” for analysis and “CLASSIFICATION” for binning.

**Compiling, Training, and Evaluating the Model**

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

  Description automatically generatedWere you able to achieve the target model performance?

I used 2 layers (excluding the outer later) for my first optimization, with a total params of 456.

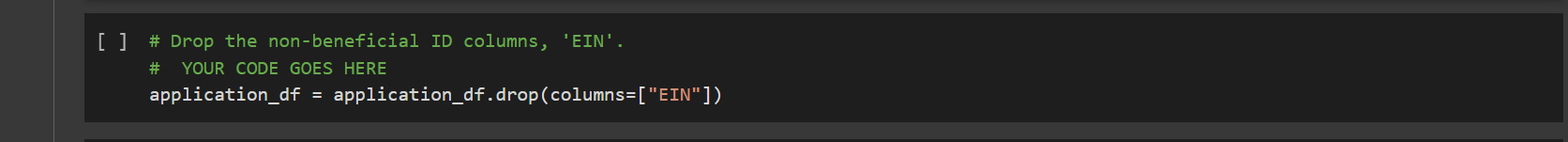
A screenshot of a computer

Description automatically generated

My first attempt was just over 73% accuracy which was under the desired 75%.

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

For my second Optimization, I left the “NAMES” columns and changed bin from <400 to <70 this time using names to filter.



**Text

Description automatically generated**

I used 4 layers (excluding the outer later) for my second optimization, with a total params of 456 but my Google Collab ran out of ram and came up with an error hence couldn’t run the Epoch and get the accuracy level.

Text

Description automatically generated