Kevin Denning

Module 21 Challenge

Alphabet Soup, which has previously funded over 34,000 organizations, employed deep learning and neural networks to assess the likelihood of successful funding for applicants.

The EIN and NAME were removed from the model since they contained irrelevant information. The remaining columns were treated as features for the model, but NAME was added back in the second test. Due to high fluctuation, CLASSIFICATION and APPLICATION\_TYPE were replaced with 'Other'. The data was divided into training and testing sets, and the target variable for the model was "IS\_SUCCESSFUL", with a value of 1 indicating yes and 0 indicating no. The APPLICATION data was analyzed, and the values of CLASSIFICATION were used for binning. This involved grouping together "rare" categorical variables under a new value called 'Other', using several data points as cutoffs for each unique value. The success of binning was checked, and categorical variables were encoded using 'pd.get\_dummies()'.

Each model underwent multiple layers of neural network processing, specifically three layers. The number of hidden nodes was determined by the number of features.

