**Module 21 Challenge Report**

1. This analysis attempted to assist the nonprofit foundation Alphabet Soup select applicants for funding with the best chance of success in their ventures. A model was derived from data from more than 3,400 previous donors to the foundation. The model attempts to determine which potential donor applications will be successful based on several factors that will be listed below.
2. The following bullets will explain the results of the analysis:
   1. The target variable for the model was whether the application was successful or not.
   2. The feature variables were as follows:
      1. Affiliation (Independent or Company Sponsored)
      2. Application Type (Alphabet Soup application type)
      3. Classification (Government organization classification)
      4. Use Case (Use case for funding)
      5. Organization (Organization Type)
      6. Status (Active or Inactive)
      7. Income Amount (Income Classification)
      8. Special Considerations (Were there special considerations for the application?)
      9. Ask Amount (Funding amount requested)
   3. Two variables were removed from the analysis as they were neither targets nor features. Those are as follows:
      1. EIN (Identification Number)
      2. Name (Name of the organization who is applying to donate)
   4. A screenshot of a computer program

      Description automatically generatedThe model was set up with two hidden layers containing 80 neurons in the first and 30 in the second. The model uses a sigmoid activation function.
   5. There were attempted models with less neurons and also with more but the accuracy of the model was largely unchanged.
3. The model was 72% accurate. This model was not accurate enough to project potential donors. In the future, I would use a PCA model to limit the amount of factors down to the most important factors in order to create a more accurate model