The report contains the following:

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

Results: Using bullet lists and images to support your answers, address the following questions:

*Data Preprocessing*

1. What variable(s) are the target(s) for your model?

* The target variable is the 'IS\_SUCCESSFUL' column from application\_df

1. What variable(s) are the features for your model?

* The feature variables are every other column from application\_df --> this was defined by dropping the 'IS\_SUCCESSFUL', ‘Status’, ASK\_AMT column from the original dataframe

1. What variable(s) should be removed from the input data because they are neither targets nor features?

* Both 'EIN' and 'NAME' columns were dropped/removed, because they were neither targets nor features for the dataset.

*Compiling, Training, and Evaluating the Model*

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

* In the first attempt, i used 8 hidden\_nodes\_layer1 and 5 hidden\_nodes\_layer2 -- these were just random guesses from which to iterate upon in the second try.

1. Were you able to achieve the target model performance?

* I was able to achieve the 73% model accuracy target

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.

**Summary of the Deep Learning Model Results**

1. **Model Architecture**:
   * **First Hidden Layer**: 8 nodes with ReLU activation.
   * **Second Hidden Layer**: 5 nodes with ReLU activation.
   * **Output Layer**: 1 node with a sigmoid activation for binary classification.
2. **Training Process**:
   * **Optimizer**: Adam optimizer
   * **Loss Function**: Binary cross-entropy, suitable for binary classification tasks.
   * **Metrics**: Accuracy was tracked during training.
   * **Validation Split**: 20% of the data was used for validation to monitor the model's performance.
3. **Performance Metrics**:
   * The training accuracy and validation accuracy (these would be shown in the history object from the training process).
   * Loss values and any overfitting or underfitting indicators observed during training.

Overall, the deep learning model was around 73% accurate in predicting the classification problem. Using a model with greater correlation between input and output would likely result in higher prediction accuracy. This could be achieved by doing additional data cleanup up front, as well as by using a model with different activation functions and iterating until higher accuracy is reached.