MY ANSWERS IN BOLD

The purpose of this analysis is to predict whether or not charities will be successful if they receive funding.

Data Preprocessing

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

IS_SUCCESSFUL

What variable(s) are considered to be the features for your model?

APPLICATION_TYPE and CLASSIFICATION

What variable(s) are neither targets nor features, and should be removed from the input data?

EIN and NAME

Compiling, Training, and Evaluating the Model

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

I started out using 2 hidden layers, 80/30 nodes and a relu activation function for a low computation time.

Were you able to achieve the target model performance?

No, I was only able to achieve up to .729 accuracy.

What steps did you take to try and increase model performance?

I tried the following to increase model performance:

- **Increasing the # of epochs from 100 to 200**
- **Adding a third hidden layer**
- **Changing the activation function from relu to tanh**

Summarize the overall results of the deep learning model. Include a recommendation for how a different model could solve this classification problem, and explain your recommendation.

Here are the results below:

relu w/ 2 hidden layers, 200 epochs

```
268/268 - 1s - loss: 0.5689 - accuracy: 0.7286 - 537ms/epoch - 2ms/step
Loss: 0.5689193606376648, Accuracy: 0.7286297082901001
```

relu w/ 3 hidden layers, 100 epochs

```
268/268 - 1s - loss: 0.5587 - accuracy: 0.7298 - 612ms/epoch - 2ms/step
Loss: 0.5587289929389954, Accuracy: 0.7297959327697754
```

tanh w/ 3 hidden layers, 100 epochs

```
268/268 - 1s - loss: 0.5587 - accuracy: 0.7269 - 530ms/epoch - 2ms/step
Loss: 0.5586904883384705, Accuracy: 0.7268804907798767
```

I am sure that by adding more layers, nodes and increasing the epochs, I would be able to reach a .75 accuracy score, but didn't have the time to accomplish this.