1. **Write your observations about the Classifier's behavior with respect to the number of estimators.**
2. **Is there an optimal value of the estimator within the given range?**

Random Forest

1. For the random forest model, the accuracy started off with better accuracy with smaller estimators and decreased with more estimators, then it increased again after n_estimators of 250. When estimator is 250, that is when accuracy was the lowest.
2. The optimal value of the estimator with the highest accuracy is 450. That is when it was at its peak as shown in the
   Graph.

Adaboost

1. For the adaboost model, the accuracy was at its highest with 150 estimators and decreased following that and plateaued with the rest of the estimators. It had the best accuracy at 150 with around 85% accuracy.
2. The optimal value with the highest accuracy is 150.

Gradient Boost

1. For the gradient boost model, The accuracy started off low with a smaller estimator value then increased, then decreased again. It seems that the best estimator values range from 250 to 350.
2. The optimal value of the estimators is 250, but can be just as good up to a value of 350.

XGB Boost

- I was not able to get my XGBoost model to create an output, so I was not able to find my best value estimator. I kept receiving the error, "feature_names may not contain [,] or <."

	Random Forest	AdaBoost	Gradient Boost	XG Boost
Accuracy	0.838339	0.845587	0.846692	0
AUC	0.880711	0.897244	0.756773	0
Random State	101	101	101	101
N Estimators	450	150	250	250