HW3
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Summary of modeling results
I trained sixteen different models on the credit dataset, eight estimators chosen from grid search as the best model for accuracy and the same eight models optimized for precision.

The best performing model for accuracy were the regression and forest classifiers, although accuracy varied very little between models. Naïve Bayes was by far the worst performing model. Precision appears to be the most significant differentiator. Gradient Boosting Classifier was the top score, followed by Logistic Regression. Logistic Regression outperformed many other models in terms of accuracy, precision, as well as the two combined.

Because I implemented parallel processing of the grid search, the time difference per model (the time column) didn't impede running these models in reasonable time. However, Gradient Boosting, RandomForest and ExtraTrees Classifiers took significantly longer than Naïve Bayes models.

i	clf	target	accuracy	precision	recall	time	params
0	RandomForestClassifier	accuracy	0.94	0.60	0.54	0.14	{'cv': None, 'error_score': 'raise',
1	ExtraTreesClassifier	accuracy	0.93	0.50	0.52	0.14	{'cv': None, 'error_score': 'raise',
2	AdaBoostClassifier	accuracy	0.93	0.38	0.56	0.05	{'cv': None, 'error_score': 'raise',
3	LogisticRegression	accuracy	0.94	0.75	0.54	0.05	{'cv': None, 'error_score': 'raise',
4	GradientBoostingClassifier	accuracy	0.93	0.43	0.53	0.20	{'cv': None, 'error_score': 'raise',
5	GaussianNB	accuracy	0.27	0.08	0.59	0.01	{'cv': None, 'error_score': 'raise',
6	DecisionTreeClassifier	accuracy	0.93	0.00	0.50	0.02	{'cv': None, 'error_score': 'raise',
7	SGDClassifier	accuracy	0.93	0.00	0.50	0.01	{'cv': None, 'error_score': 'raise',
8	KNeighborsClassifier	accuracy	0.93	0.00	0.50	0.01	{'cv': None, 'error_score': 'raise',
9	RandomForestClassifier	precision	0.93	0.43	0.53	0.16	{'cv': None, 'error_score': 'raise',
10	ExtraTreesClassifier	precision	0.93	0.43	0.53	0.17	{'cv': None, 'error_score': 'raise',
11	AdaBoostClassifier	precision	0.93	0.38	0.56	0.05	{'cv': None, 'error_score': 'raise',
12	LogisticRegression	precision	0.94	0.75	0.54	0.02	{'cv': None, 'error_score': 'raise',
13	GradientBoostingClassifier	precision	0.94	1.00	0.51	0.13	{'cv': None, 'error_score': 'raise',
14	GaussianNB	precision	0.27	0.08	0.59	0.01	{'cv': None, 'error_score': 'raise',
15	DecisionTreeClassifier	precision	0.93	0.25	0.52	0.02	{'cv': None, 'error_score': 'raise',
16	SGDClassifier	precision	0.93	0.00	0.50	0.03	{'cv': None, 'error_score': 'raise',
17	KNeighborsClassifier	precision	0.86	0.04	0.48	0.02	{'cv': None, 'error_score': 'raise',