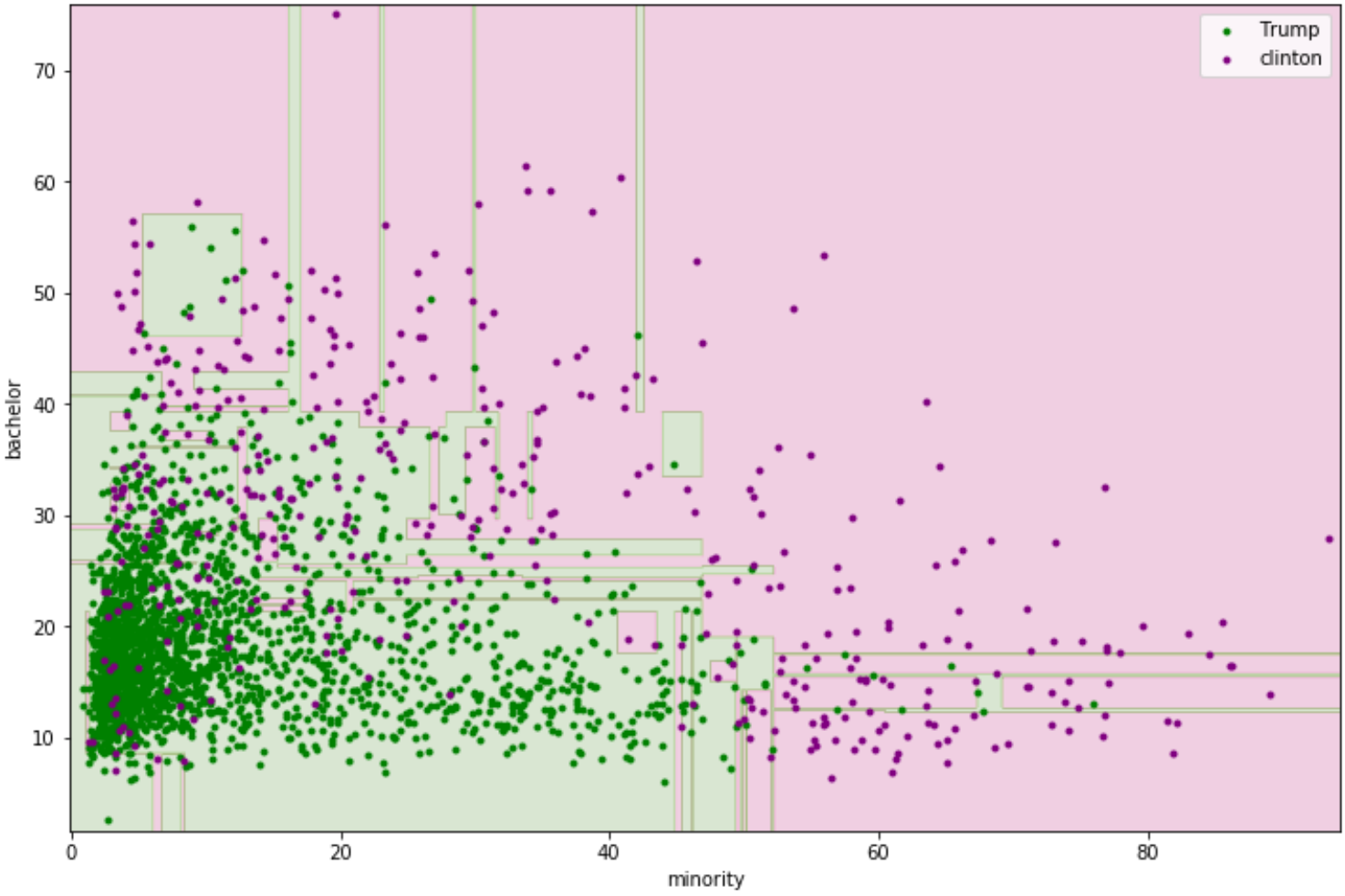
Exercise 1.1: Classification with a Decision Tree

□□□ Classification with a Decision Tree

The goal of this exercise is to get comfortable using Decision Trees for classification in `sklearn`. Eventually, you will produce a plot similar to the one given below:



Instructions:

- Read the train and test datafile as Pandas data frame.
- Use `minority` and `bachelor` as the predictor variables and `won` as the response.
- Fit a decision tree of depth 2 and another of depth 10 on the training data.
- Call the function `plot_boundary` to visualise the decision boundary of these 2 classifiers.
- Increase the number of predictor variables as mentioned in scaffold.
- Initialize a decision tree classifier of depth 2, 10 and 15.
- Fit the model on the train data.
- Compute the train and test accuracy scores for each classifier.

- Use the helper code to look at the feature importance of the predictors from the decision tree of depth 15.

Hints:

```
sklearn.DecisionTreeClassifier()
```

Generates a Logistic Regression classifier

```
classifier.score()
```

Accuracy classification score.

```
classifier.fit()
```

Build a decision tree classifier from the training set (X, y).

Note: This exercise is auto-graded and you can try multiple attempts.