horseracing

February 22, 2018

0.0.1 Proposal #1 Horse racing dataset.

The dataset is derieved from tips that tipsters provided to bettors.
Tipsters are people that give bettors their best guess aka tip on how to place a bet on a horse race.
This dataset could be used to predict horse races.

Topic: Interesting Dataset;

Proposal/Yellowbrick: Classification tutorial with an unbalanced data set

Notes: This dataset is unbalanced. Given that horse racing is a game of chance, you would expect an unbalanced target.

Other:

1. Consists of 380k tips
2. Current features include odds, track, bet-type, horse name, and result
3. Other features could be added to put together a successful machine learning model such as tempature, humidty, and precipitation.

```
In [1]: import pandas as pd
        from yellowbrick.classifier.class_balance import ClassBalance
        from sklearn.ensemble import RandomForestClassifier
        from sklearn.preprocessing import LabelEncoder, OneHotEncoder
        from sklearn.model_selection import train_test_split
```

```
In [2]: features = ['Track', 'Horse', 'Bet Type', 'Odds', 'Result']
        data = pd.read_csv("https://query.data.world/s/hGxcDSVClhoNX6KacQMHnFVNbHy9Zg",
                           encoding='latin-1')
        print(data.shape)
        data[features].head()
```

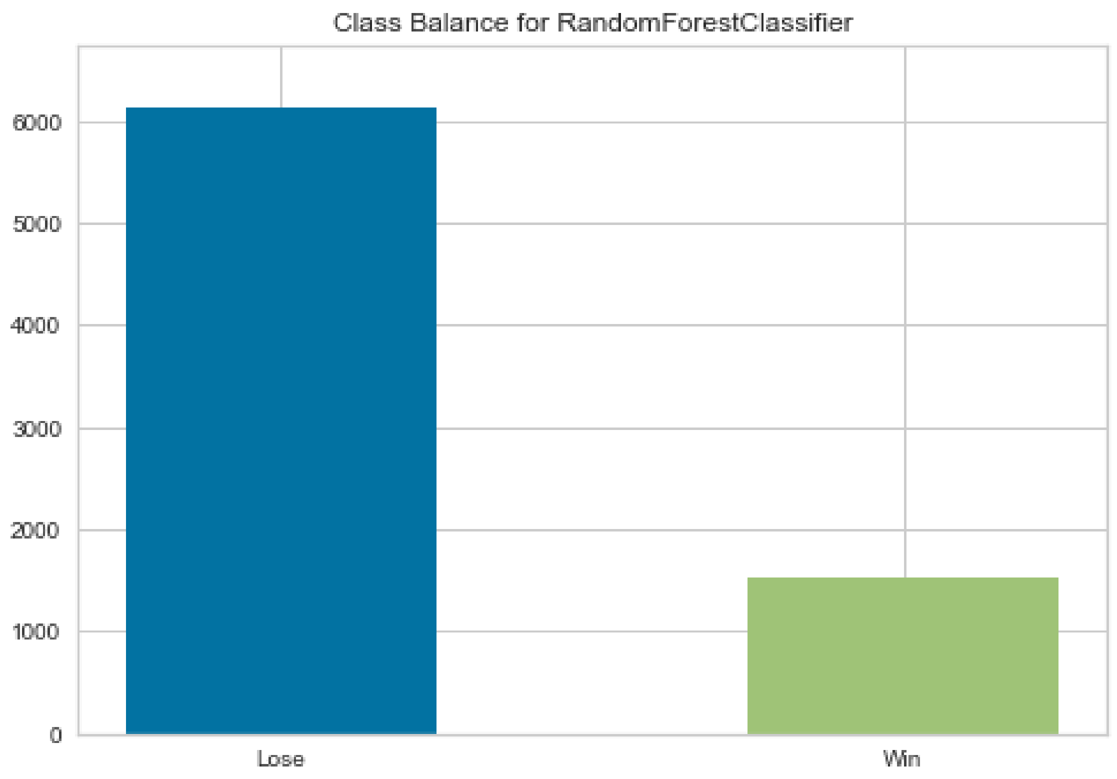
```
(38248, 10)
```

```
Out[2]:        Track              Horse Bet Type  Odds Result
        0      Ascot          Fredricka      Win  8.00   Lose
        1     Thirsk      Spend A Penny      Win  4.50   Lose
        2       York  Straightothepoint      Win  7.00   Lose
        3  Newmarket     Miss Inga Sock      Win  5.00   Lose
        4      Ascot              Peril      Win  4.33    Win
```

```
In [3]: # Create training and test sets
        X = data.Odds.values.reshape(-1,1)
        y = LabelEncoder().fit_transform(data.Result.values.ravel())
        X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,
                                                            random_state=42)
        classes = data.Result.unique()
```

```
In [4]: # Use Yellowbrick Visualizer ClassBalance
        forest = RandomForestClassifier()
        visualizer = ClassBalance(forest, classes=classes)

        visualizer.fit(X_train, y_train)  # Fit the training data to the visualizer
        visualizer.score(X_test, y_test)  # Evaluate the model on the test data
        g = visualizer.poof()
```


Class Balance for RandomForestClassifier
6000
5000
4000
3000
2000
1000
0
Lose
Win