

Importing Libraries

```

1 import numpy as np
2 import matplotlib.pyplot as plt
3 import matplotlib.gridspec as gridspec
4 import itertools
5 from sklearn.linear_model import LogisticRegression
6 from sklearn.svm import SVC
7 from sklearn.ensemble import RandomForestClassifier
8 from mlxtend.classifier import EnsembleVoteClassifier
9 from mlxtend.data import iris_data
10 from mlxtend.plotting import plot_decision_regions
11 %matplotlib inline

```

▼ Initializing Classifiers

```

1 # Initializing Classifiers
2 clf1 = LogisticRegression(random_state=0)
3 clf2 = RandomForestClassifier(random_state=0)
4 clf3 = SVC(random_state=0, probability=True)
5 eclf = EnsembleVoteClassifier(clfs=[clf1, clf2, clf3],
6                               weights=[2, 1, 1], voting='soft')

```

Loading iris data

```

1 # Loading iris data
2 X, y = iris_data()
3 X = X[:, [0, 2]]

```

```

1 # Plotting Decision Regions
2
3 gs = gridspec.GridSpec(2, 2)
4 fig = plt.figure(figsize=(10, 8))
5

```

 <Figure size 720x576 with 0 Axes>

```

1 #Ensemble
2
3 labels = ['Logistic Regression',
4           'Random Forest',
5           'RBF kernel SVM',
6           'Ensemble']
7
8 for clf, lab, grd in zip([clf1, clf2, clf3, eclf],
9                           labels,
10                          itertools.product([0, 1],

```

```

11         repeat=2)):
12     clf.fit(X, y)
13     ax = plt.subplot(gs[grd[0], grd[1]])
14     fig = plot_decision_regions(X=X, y=y,
15                               clf=clf, legend=2)
16     plt.title(lab)
17
18 plt.show()

```

```

[ ] /usr/local/lib/python3.6/dist-packages/mlxtend/plotting/decision_regions.py:244: MatplotlibDeprecationWarning: The axis() method is deprecated. Use axis() instead.
ax.axis(xmin=xx.min(), xmax=xx.max(), y_min=yy.min(), y_max=yy.max())
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```



