ASSIGNMENT

Random Forest.

```
from sklearn.datasets import load_digits
digits = load_digits()

%matplotlib inline
import matplotlib.pyplot as plt
import seaborn as sns; sns.set()

fig = plt.figure(figsize=(6, 6))
fig.subplots_adjust(left=0, right=1, bottom=0,
                    top=1, hspace=0.05, wspace=0.05)

for i in range(64):
    ax = fig.add_subplot(8, 8, i+1, xticks=[], yticks=[])
    ax.imshow(digits.images[i], cmap=plt.cm.binary,
              interpolation='nearest')
    ax.text(0, 7, str(digits.target[i]))

from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
```

```
Xtrain, Xtest, ytrain, ytest = train_test_split(digits.data,
                                digits.target, random_state=0)
model = RandomForestClassifier(n_estimators=1000)
model.fit(Xtrain, ytrain)
yfred = model.predict(Xtest)

from sklearn import metrics
print(metrics.classification_report(yfred, ytest))

from sklear.metrics import confusion_matrix
mat = confusion_matrix(ytest, yfred)
sns.heatmap(mat.T, square=True, annot=True,
            fmt='d', cbar=False)
plt.xlabel('true label')
plt.ylabel('predicted label')
```