Logistic Regression

Example

Logistic Regression - Example

```
import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.datasets import load_breast_cancer
from sklearn.metrics import confusion_matrix
from sklearn.preprocessing import StandardScaler

df = pd.read_csv('data/wisc_bc_data.csv')
X = df.drop(['id', 'diagnosis'], axis='columns')
y = df.diagnosis

X_train, X_test, y_train, y_test = train_test_split(X, y,
                                    test_size=0.2, random_state=5)

scaler = StandardScaler()
scaler.fit(X_train)
X_train = scaler.transform(X_train)
X_test = scaler.transform(X_test)
```

Logistic Regression - Example

```
logmodel = LogisticRegression()
logmodel.fit(X_train,y_train)
print('Accuracy', logmodel.score(X_test, y_test))

predictions = logmodel.predict(X_test)

# switch the labels around as 1 represents a negative,
# 0 represents a positive

cm = confusion_matrix(y_test, predictions, labels=[1,0])
print(cm)

tn, fp, fn, tp = cm.ravel()
print("TN", tn, "FP", fp, "FN", fn, "TP", tp)
```

Example Output

```
[[72  0]
 [ 0 42]]
TN 72 FP 0 FN 0 TP 42
```