



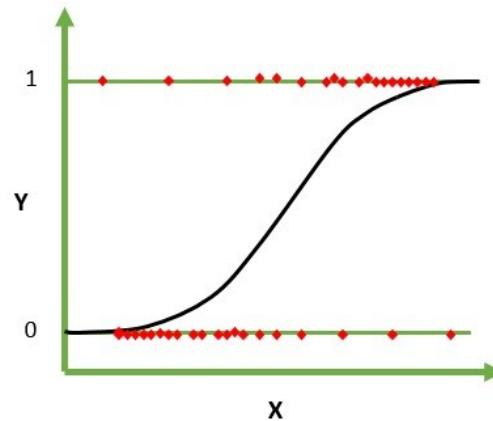
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LOGISTIC REGRESSION

Logistics Regression

- A regression that having binary dependent variable
- in its basic form, uses a logistic function to model a binary dependent variable



Logistics Regression

- Example of classification of iris species

```
# import libraries
import pandas as pd
from sklearn.linear_model import LogisticRegression
from sklearn.model_selection import train_test_split
# read dataset
dataframe = pd.read_csv('data/iris.csv')
dataframe.head()
```

Logistics Regression

- Example of classification of iris species

```
# target and features
target = dataframe.loc[:, 'Species']
features = dataframe.iloc[:, 1:5]
```

Logistics Regression

- **Example of classification of iris species**

```
# Create training and test set
# if test_size is None, it will be set to 0.25.
features_train, features_test, target_train, target_test =
train_test_split(features, target, test_size=0.3,
random_state=1)

# Create logistic regression
classifier = LogisticRegression()

# Train model and make predictions
target_predicted =
classifier.fit(features_train, target_train).predict(features
_test)
```

- Now evaluation...

Logistic Regression

- **Example of classification of iris species**

```
class_names=target.unique()
# Create confusion matrix
matrix = confusion_matrix(target_test, target_predicted)
# Create pandas dataframe
dataframe1 = pd.DataFrame(matrix, index=class_names,
columns=class_names)
# Create heatmap
sns.heatmap(dataframe1, annot=True, cbar=None,
cmap="Blues")
plt.title("Confusion Matrix"), plt.tight_layout()
plt.ylabel("True Class"), plt.xlabel("Predicted Class")
plt.show()
```