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In [6]: #import staements
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import accuracy_score, confusion_matrix, ConfusionMatrixDisplay

In [ ]: data = pd.read_csv("seattle_weather_1948-2017.csv")
data.head(5)

In [ ]: data.shape

In [ ]: data.describe()

In [ ]: data.isnull().any()

In [ ]: features = ["precipitation", "temp-max", "temp-min", "wind"]
X = data[features]
y = data.iloc[:, 5]

In [ ]: X.head(5)

In [ ]: y

In [ ]: X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, stratify = y,
X_train.shape, y_train.shape, X_test.shape, y_test.shape

In [ ]: naiveBayes = GaussianNB()
naiveBayes.fit(X_train, y_train)

In [ ]: y_preds = naiveBayes.predict(X_test)
y_preds

In [ ]: print("Training Score (accuracy): ", accuracy_score(y_train, naiveBayes.predict(X_train)))
print("Testing Score (accuracy): ", accuracy_score(y_test, y_preds))

In [ ]: confusion = confusion_matrix(y_test, y_preds, labels = naiveBayes.classes_)
display = ConfusionMatrixDisplay(confusion_matrix = confusion, display_labels = naiveBayes.classes_)
display.plot()
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