

## ✓ Evaluate with precision, recall, F1-score

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import OneHotEncoder
from sklearn.metrics import classification_report
from sklearn.compose import ColumnTransformer
from sklearn.pipeline import Pipeline
from sklearn.ensemble import GradientBoostingClassifier

df = pd.read_csv('travel_data.csv');
X = df.drop(columns=['user_id', 'booking_made'])
y = df['booking_made']
categorical_cols = ['search_origin', 'search_destination', 'device_type']
numerical_cols = ['session_duration', 'pages_visited', 'travel_dates_flexibility', 'clicked_offer']
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=100)
preprocessor = ColumnTransformer([
    ('cat', OneHotEncoder(handle_unknown='ignore'), categorical_cols)
], remainder='passthrough')
pipeline = Pipeline([
    ('preprocessor', preprocessor),
    ('classifier', GradientBoostingClassifier(random_state=100))
])
pipeline.fit(X_train, y_train)
y_pred = pipeline.predict(X_test)

print('\n \n Evaluate with precision, recall, F1-score \n')
print(classification_report(y_test, y_pred))
```



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	precision	recall	f1-score	support
0	0.77	0.96	0.86	108
1	0.00	0.00	0.00	31
accuracy			0.75	139
macro avg	0.39	0.48	0.43	139
weighted avg	0.60	0.75	0.67	139