

## Lab 10 - Clean Python Code (No Extra Comments)

```
import pandas as pd
import numpy as np

fake = pd.read_csv("Fake.csv")
true = pd.read_csv("True.csv")

fake["label"] = 0
true["label"] = 1

data = pd.concat([fake, true], axis=0).reset_index(drop=True)

print("Rows:", data.shape[0])
print("Columns:", data.shape[1])

print(data.isnull().sum())

for col in data.columns:
    if data[col].isnull().sum() > 0:
        data[col] = data[col].fillna(data[col].mode()[0])

print(data.dtypes)

if "date" in data.columns:
    data = data.drop("date", axis=1)

cat_cols = data.select_dtypes(include="object").columns
data[cat_cols] = data[cat_cols].apply(lambda x: pd.factorize(x)[0])

X = data.iloc[:, :-1]
Y = data.iloc[:, -1]

print("X shape:", X.shape)
print("Y shape:", Y.shape)
```