import pandas as pd

import numpy as np

from scipy import stats

# Sample data for A/B testing

data = {

'group': np.random.choice(['A', 'B'], size=1000),

'conversion': np.random.randint(0, 2, size=1000)

}

df = pd.DataFrame(data)

# Separate the data into groups

group\_a = df[df['group'] == 'A']

group\_b = df[df['group'] == 'B']

# Calculate conversion rates

conversion\_rate\_a = group\_a['conversion'].mean()

conversion\_rate\_b = group\_b['conversion'].mean()

print(f"Conversion rate for group A: {conversion\_rate\_a:.2f}")

print(f"Conversion rate for group B: {conversion\_rate\_b:.2f}")

# Perform a t-test to compare the conversion rates

t\_stat, p\_value = stats.ttest\_ind(group\_a['conversion'], group\_b['conversion'])

print(f"T-statistic: {t\_stat:.2f}")

print(f"P-value: {p\_value:.2f}")

# Determine if the result is statistically significant

alpha = 0.05

if p\_value < alpha:

print("The result is statistically significant.")

else:

print("The result is not statistically significant.")