import pandas as pd

# Generating date index with UTC timezone

start\_date\_1 = '2024-01-01'

end\_date\_1 = '2024-01-05'

date\_index\_1 = pd.date\_range(start=start\_date\_1, end=end\_date\_1, freq='D', tz='UTC')

print(date\_index\_1)

# Localizing timezone to 'America/New\_York'

date\_index\_2 = pd.date\_range(start=start\_date\_1, end=end\_date\_1, freq='D')

date\_index\_2 = date\_index\_2.tz\_localize('America/New\_York')

print(date\_index\_2)

# Converting timezone to 'Europe/London'

date\_index\_3 = date\_index\_2.tz\_convert('Europe/London')

print(date\_index\_3)

# Combining two different timezones

date\_index\_4 = pd.date\_range(start=start\_date\_1, periods=3, freq='D', tz='UTC')

date\_index\_5 = pd.date\_range(start=start\_date\_1, periods=3, freq='D', tz='America/New\_York')

combined\_index = date\_index\_4.union(date\_index\_5)

print(combined\_index)