In [1]:

```
import pandas as pd
```

In [2]:

```
import os
def process_weather_data(file_path):
    weather_data = pd.read_csv(file_path)
    # Convert the timestamp to a pandas datetime object
    datetime_obj = pd.to_datetime(weather_data['timestamp_local'])

    # Extract the airport code from the file name
    airport_code = os.path.basename(file_path).split('_')[0].upper()

    # Extract the hour component
    weather_data['Date'] = datetime_obj.dt.strftime('%m/%d/%Y')
    weather_data['hours'] = datetime_obj.dt.hour

    columns_to_drop = ['app_temp', 'dhi', 'dni', 'ghi', 'pod', 'slp', 'solar_rad', 'datetime', 'timestamp_
    weather_data.drop(columns=columns_to_drop, inplace=True)
    file_name = os.path.basename(file_path)
    if 'syr' in file_name.lower():
        weather_data.columns = weather_data.columns.map(lambda x: 'arr_' + str(x))
        weather_data.rename(columns={'arr_Date': 'Date'}, inplace=True)
    else:
        weather_data['Origin_Airport'] = airport_code
        weather_data.columns = weather_data.columns.map(lambda x: 'dep_' + str(x))
        weather_data.rename(columns={'dep_Date': 'Date', 'dep_Origin_Airport': 'Origin_Airport'}, inplace=

    return weather_data
```

In [3]:

```
# List of file paths

# file_paths = ['data_miner/data/SYR_weather_data_forecast.csv', 'data_miner/data/JFK_weather_data_forecas
#               'data_miner/data/MCO_weather_data_forecast.csv', 'data_miner/data/ORD_weather_data_forecast
file_paths = ['data_miner/data/SYR_weather_data_hourly.csv', 'data_miner/data/JFK_weather_data_hourly.csv'
              'data_miner/data/MCO_weather_data_hourly.csv', 'data_miner/data/ORD_weather_data_hourly.csv'

for file in file_paths:
    processed_data = process_weather_data(file)
    file_name = os.path.basename(file)
    file_name_no_ext, file_ext = os.path.splitext(file_name)
    new_file_name = f'{file_name_no_ext}_processed.csv'
    print(processed_data.head())
    processed_data.to_csv(f'weather_data/{new_file_name}', index=False)
    print(len(processed_data.columns))
```

```
   arr_clouds  arr_clouds_hi  arr_clouds_low  arr_clouds_mid  arr_dewpt  \
0          90              0             100               0        2.1
1          93             99             100               0        7.5
2          89             99             100               0        7.4
3          83             71             100              23        7.3
4          87            100             100              37        7.4

   arr_ozone  arr_pop  arr_precip  arr_pres  arr_rh  ...  arr_vis  \
0      378.0       50        0.76    1003.5      79  ...   13.296
1      376.5       40        0.50    1003.5      79  ...   12.800
2      375.0        0        0.00    1003.5      79  ...   12.200
3      374.3        0        0.00    1004.0      81  ...   12.200
4      372.8        0        0.00    1004.0      81  ...   12.200

   arr_weather.description  arr_weather.code  arr_wind_cdir  \
0                  Drizzle               301            ENE
1          Overcast clouds               804            ENE
2          Overcast clouds               804              E
3          Overcast clouds               804              E
4          Overcast clouds               804              E
```

In [ ]: