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# The following code to create a dataframe and remove duplicated rows is always
executed and acts as a preamble for your script:

# dataset = pandas.DataFrame(Date,DateTime, AirTC_Avg, AirTC_Max, AirTC_Min)
# dataset = dataset.drop_duplicates()

# Paste or type your script code here:
import pandas as pd
import matplotlib.pyplot as plt
import matplotlib.dates as mdates
from matplotlib.lines import Line2D

# Convert and sort
dataset['DateTime'] = pd.to_datetime(dataset['DateTime']).dt.round('30min')
dataset = dataset.drop_duplicates(subset='DateTime')
dataset = dataset.sort_values('DateTime')

# Create full 30-min interval index
full_range = pd.date_range(start=dataset['DateTime'].min(),
                           end=dataset['DateTime'].max(),
                           freq='30T')

dataset =
dataset.set_index('DateTime').reindex(full_range).rename_axis('DateTime').reset_
index()

# Add constant 0 line
dataset['0_Value'] = 0

# Set chart size (1240x500 px ≈ 13"x5.2")
plt.figure(figsize=(1240/96, 500/96))

# Plot lines
plt.plot(dataset['DateTime'], dataset['AirTC_Avg'], label='AirTC Avg',
color='#118DFF', linewidth=3)
plt.plot(dataset['DateTime'], dataset['AirTC_Min'], label='AirTC Min',
color='#12239E', linewidth=3)
plt.plot(dataset['DateTime'], dataset['AirTC_Max'], label='AirTC Max',
color='#E66C37', linewidth=3)
plt.plot(dataset['DateTime'], dataset['0_Value'], label='_nolegend_',
color='#808080', linewidth=2, linestyle='--')

# Axis labels with fonts
plt.xlabel('Timestamp', fontsize=13, fontname='DIN',fontweight='bold')
plt.ylabel('Temperature (°C)', fontsize=13, fontname='DIN',fontweight='bold')

# X-axis formatting: every 3 days
locator = mdates.DayLocator(interval=1)
formatter = mdates.DateFormatter('%d-%m-%Y')
plt.gca().xaxis.set_major_locator(locator)
plt.gca().xaxis.set_major_formatter(formatter)

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plt.xticks(rotation=45, ha='right', fontsize=10, fontname='Segoe UI')

# Y-axis formatting
plt.yticks(fontsize=10, fontname='Segoe UI')

# Hide tick lines but keep labels
plt.tick_params(axis='both', which='both', length=0)

# Remove all borders
for spine in ['top', 'right', 'left', 'bottom']:
    plt.gca().spines[spine].set_visible(False)

#legend
custom_lines = [
    Line2D([0], [0], color='#118DFF', marker='o', linestyle='None',
markersize=7, label='AirTC Avg'),
    Line2D([0], [0], color='#12239E', marker='o', linestyle='None',
markersize=7, label='AirTC Min'),
    Line2D([0], [0], color='#E66C37', marker='o', linestyle='None',
markersize=7, label='AirTC Max')
]

plt.legend(
    handles=custom_lines,
    loc='lower center',
    bbox_to_anchor=(0.5, 1),
    ncol=3,
    fontsize=9,
    frameon=False,
    handletextpad=0.2,      # space between marker and text
    columnspacing=0.5      # space between columns
)

plt.tight_layout(rect=[0, 0, 1, 1.022])
plt.show()

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# The following code to create a dataframe and remove duplicated rows is always
executed and acts as a preamble for your script:

# dataset = pandas.DataFrame(Day, Depth, Temp)
# dataset = dataset.drop_duplicates()

# Paste or type your script code here:
import matplotlib.pyplot as plt
import pandas as pd
import seaborn as sns

# Convert 'Day' to date format
dataset['Day'] = pd.to_datetime(dataset['Day']).dt.date

# Pivot to create the heatmap structure
pivot = dataset.pivot(index='Depth', columns='Day', values='Temp')

# Sort Depth to ensure the smallest depth is at the top (0 at top)
pivot = pivot.sort_index(ascending=False)

# Plot the heatmap
plt.figure(figsize=(14, 8)) # Bigger plot
sns.heatmap(pivot, cmap='jet', cbar=True)

# Axis formatting
plt.gca().invert_yaxis() # Ensures depth increases downward
plt.xlabel('Date')
plt.ylabel('Depth (m)')
plt.title('Temperature Heatmap by Depth and Date')

plt.tight_layout()
plt.show()
```