

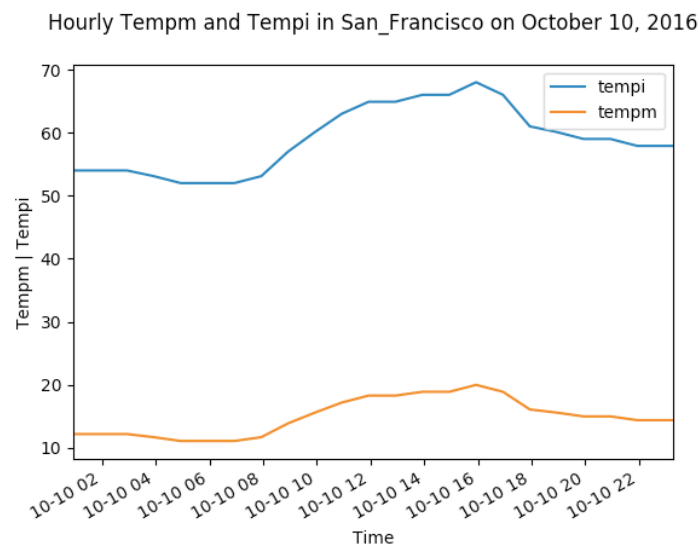
Visualization of Data

Name: Xiaosheng Liang

Student Number: 15211913

1. Line Gragh

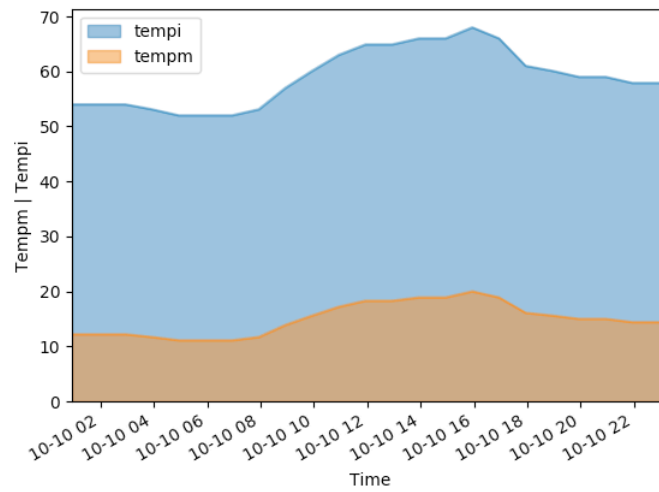
```
# Line Graph
frame0.plot()
plt.title("Hourly Tempm and Tempi in San_Francisco on October 10, 2016\n")
plt.ylabel("Tempm | Tempi")
plt.xlabel("Time")
print ("line graph is finished.")
```



2. Area Gragh

```
# Area Graph
frame0.plot.area(stacked = False)
plt.title("Hourly Tempm and Tempi in San_Francisco on October 10, 2016\n")
plt.ylabel("Tempm | Tempi")
plt.xlabel("Time")
print ("Area graph is finished.")
```

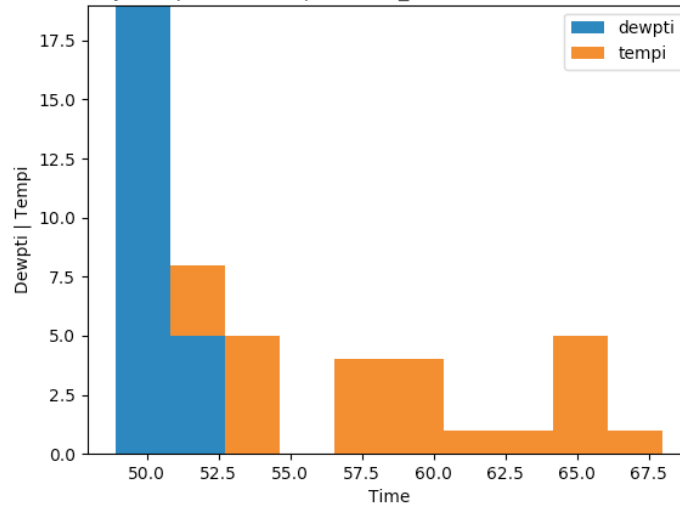
Hourly Tempm and Tempi in San_Francisco on October 10, 2016



3. Stacked Histogram

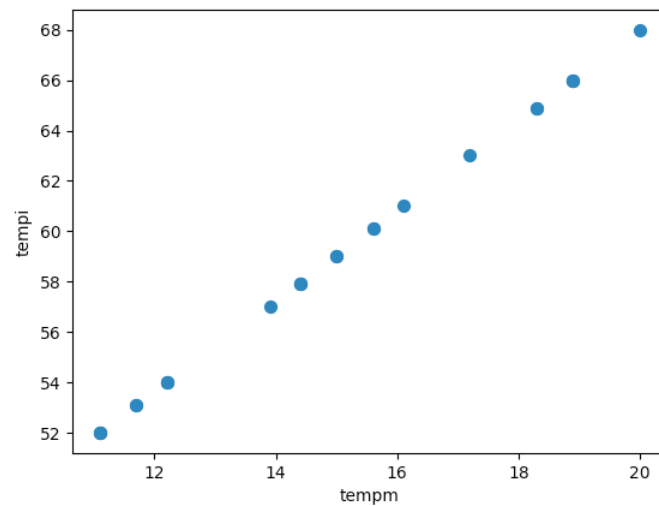
```
# Stacked Histogram
frame1.plot.hist(stacked=True)
plt.title("Hourly Tempm and Dewpti in San_Francisco on October 10, 2016")
plt.ylabel("Dewpti | Tempi")
plt.xlabel("Time")
print ("Histogram is finished.")
```

Hourly Tempm and Dewpti in San_Francisco on October 10, 2016



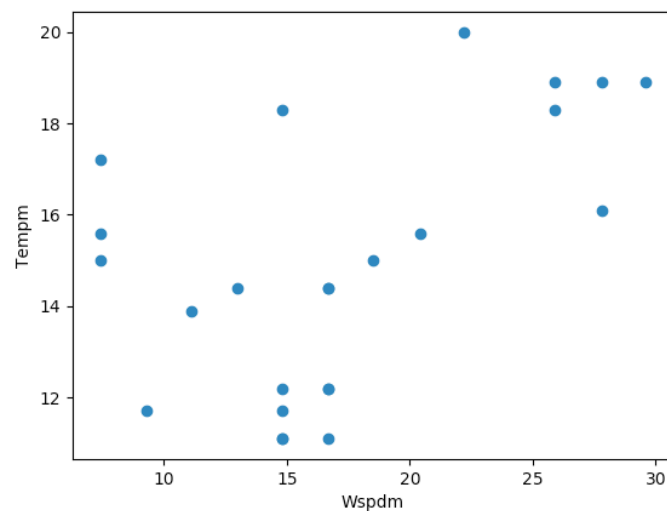
4. ScatterPlots

```
# ScatterPlots
frame0.plot.scatter(x="tempm", y="tempi", s=50 )
plt.title("Hourly Tempi and Tempm in San_Francisco on October 10, 2016\n")
plt.ylabel("Tempm")
plt.xlabel("Tempi")
plt.show()
```



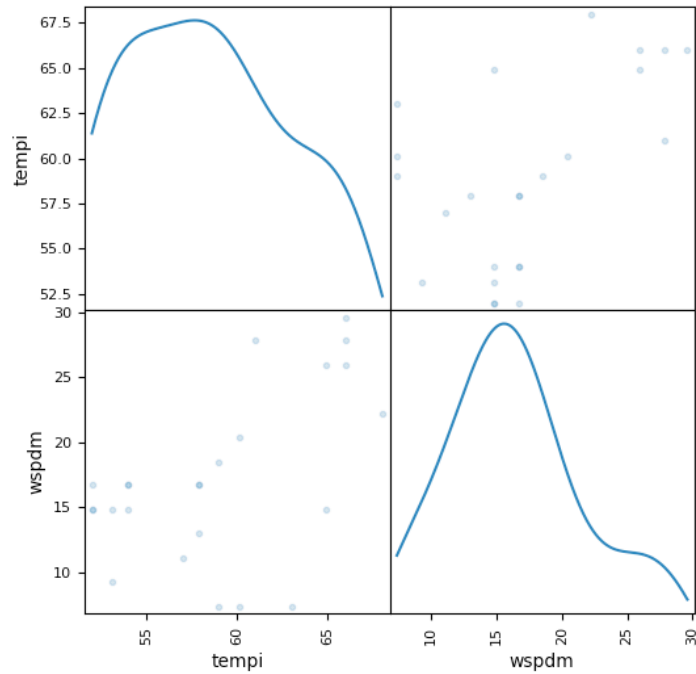
```
plt.scatter(frame2['wspdm'], frame0['tempm'])
plt.title("Hourly Wspdm and Tempm in San_Francisco on October 10, 2016\n")
plt.ylabel("Tempm")
plt.xlabel("Wspdm")
print ("ScatterPlots are finished.")
```

Hourly Wspdm and Tempm in San_Francisco on October 10, 2016

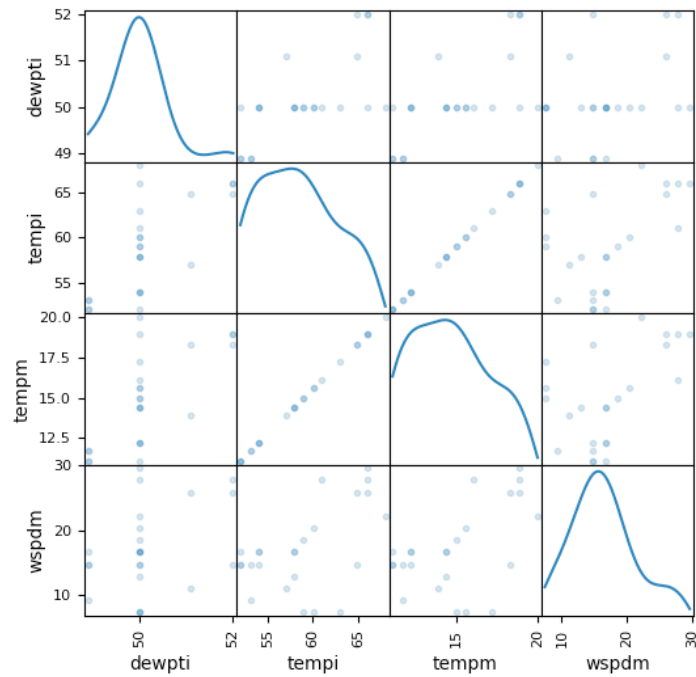


5. Matrix Gragh

```
# Matrix Gragh
scatter_matrix(frame2, alpha=0.2, figsize=(6, 6), diagonal='kde')
```

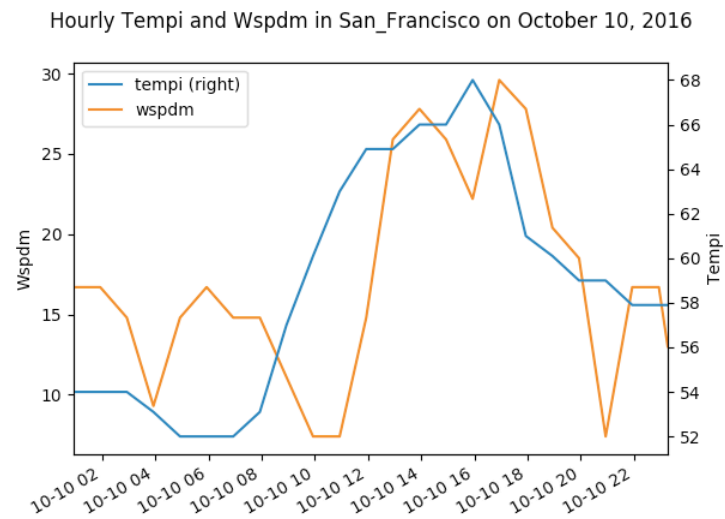


```
scatter_matrix(frame3, alpha=0.2, figsize=(6, 6), diagonal='kde')
print ("Matrix Graphs are finished")
```

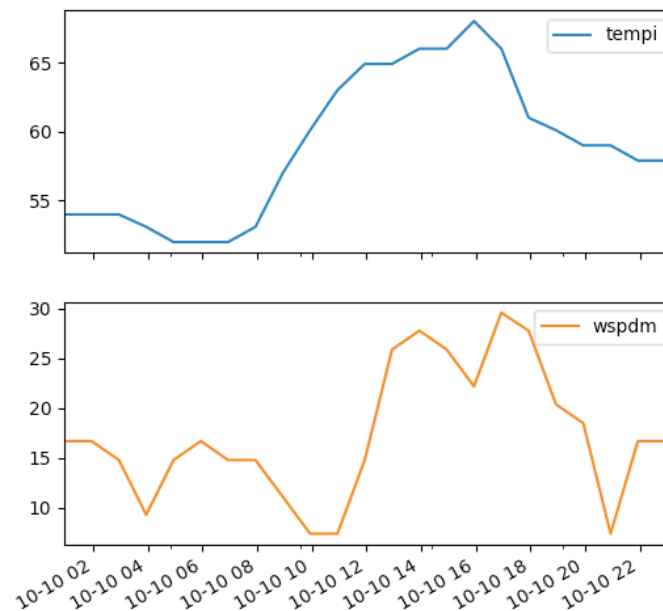


6. Double Axis Line Graghs

```
# Dual Axis Line Graphs
ax = frame2.plot(secondary_y=['tempi'])
ax.set_ylabel("Wspdm")
ax.right_ax.set_ylabel("Tempi")
plt.title("Hourly Tempi and Wspdm in San_Francisco on October 10, 2016\n")
plt.xlabel("Time")
```



```
frame2.plot(subplots=True, figsize=(6, 6));
print ("Dual Axis Line Graphs are finiished!")
```



7. Explore further – Average of Pressure as Temperature increase

```
# Explore the data further
avg_hourly_tempm = frame4.groupby("tempm")
temp_data = avg_hourly_tempm.mean()
print ("Data:\n")
print(temp_data)
temp_data.plot()
plt.title("Average of Pressure as Temperature increases\n")
plt.xlabel("Temperature")
plt.ylabel("Pressure")
plt.show()
```

