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In [10]: import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
from scipy import stats
```

```
In [11]: # Load the Excel file
excel_file = pd.ExcelFile('D:\Derivatives Trading\Mini Hang Seng.xlsx')
```

```
In [12]: # Get the sheet you want to read
sheet_name = 'For Python' # Replace with the name of the sheet you want to read
df = excel_file.parse(sheet_name)
```

```
In [13]: # Output data information
print(df.head())
```

	Date	PnL Index	Hang Seng	HSI VIX
0	2023-12-12	100.000000	16374.50	23.90
1	2023-12-13	99.959994	16228.75	22.84
2	2023-12-14	100.597928	16403.19	22.36
3	2023-12-15	101.180204	16792.19	22.49
4	2023-12-18	101.080163	16629.23	22.81

```
In [14]: #*****Plotting setup*****#
# Generate some data
Date = df["Date"]
Date
y1 =df["PnL Index"]
y1
y2 = df["Hang Seng"]
y2
```

```
Out[14]: 0    16374.50
1    16228.75
2    16403.19
3    16792.19
4    16629.23
5    16505.00
6    16597.90
7    16625.56
8    16334.55
9    16624.84
Name: Hang Seng, dtype: float64
```

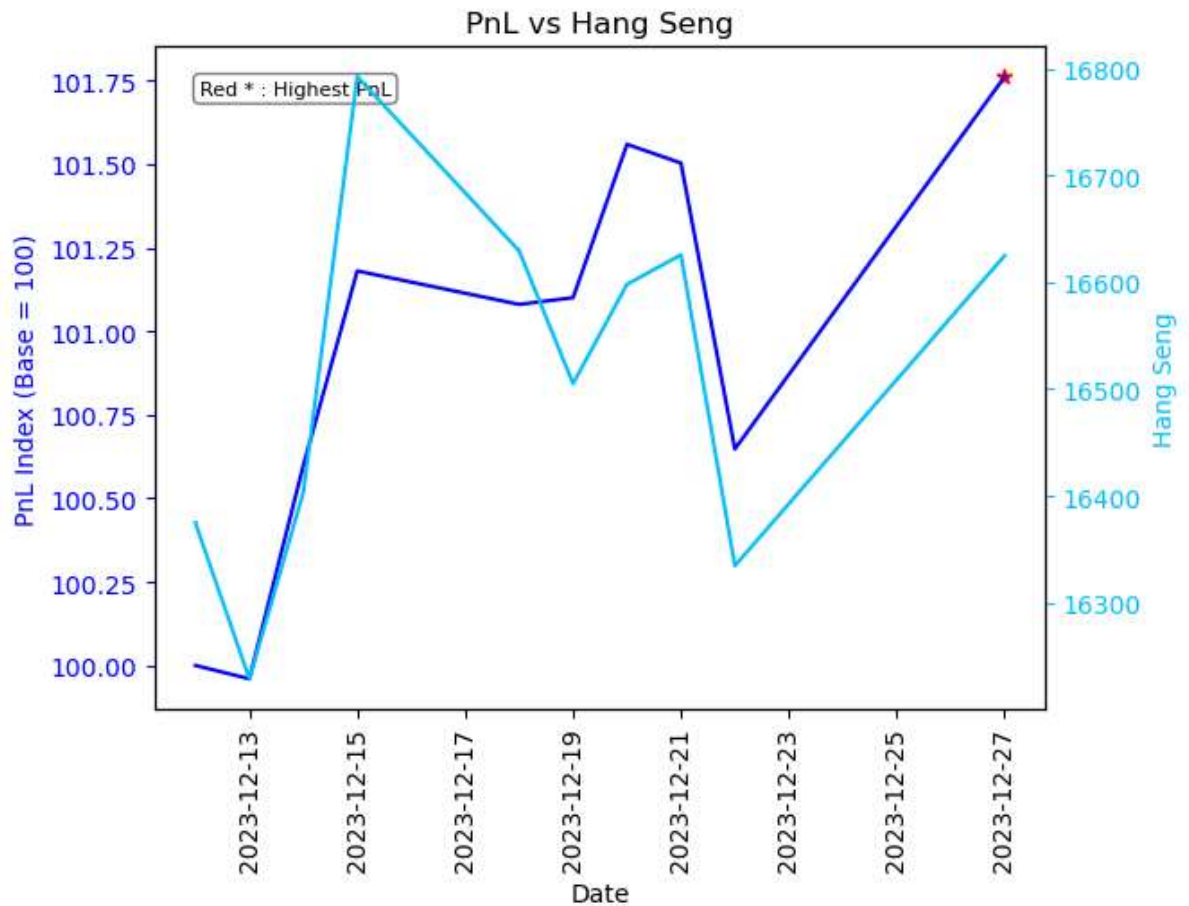
```
In [15]: # Get the maximum PnL value
max_pnl = df['PnL Index'].max()
max_pnl_date = df.loc[df['PnL Index']==max_pnl, 'Date'].values[0]
```

```
In [16]: # Create the plot and set the first y-axis (left)
fig, ax1 = plt.subplots()
plt.xticks(rotation=90)
ax1.plot(Date, y1, 'b-')
ax1.scatter(max_pnl_date, max_pnl, color='red', marker='*')
ax1.set_xlabel('Date')
ax1.set_ylabel('PnL Index (Base = 100)', color='b')
ax1.tick_params('y', colors='b')

# Set the second y-axis (right)
ax2 = ax1.twinx()
ax2.plot(Date, y2, color='deepskyblue', marker=',')
ax2.set_ylabel('Hang Seng', color='deepskyblue')
ax2.tick_params('y', colors='deepskyblue')
```

```
# Add message box
msg = "Red * : Highest PnL"
props = dict(boxstyle='round', facecolor='white', alpha=0.5)
ax1.text(0.05, 0.95, msg, transform=ax1.transAxes, fontsize=8,
        verticalalignment='top', bbox=props)

# Show the plot
plt.title('PnL vs Hang Seng')
plt.show()
```



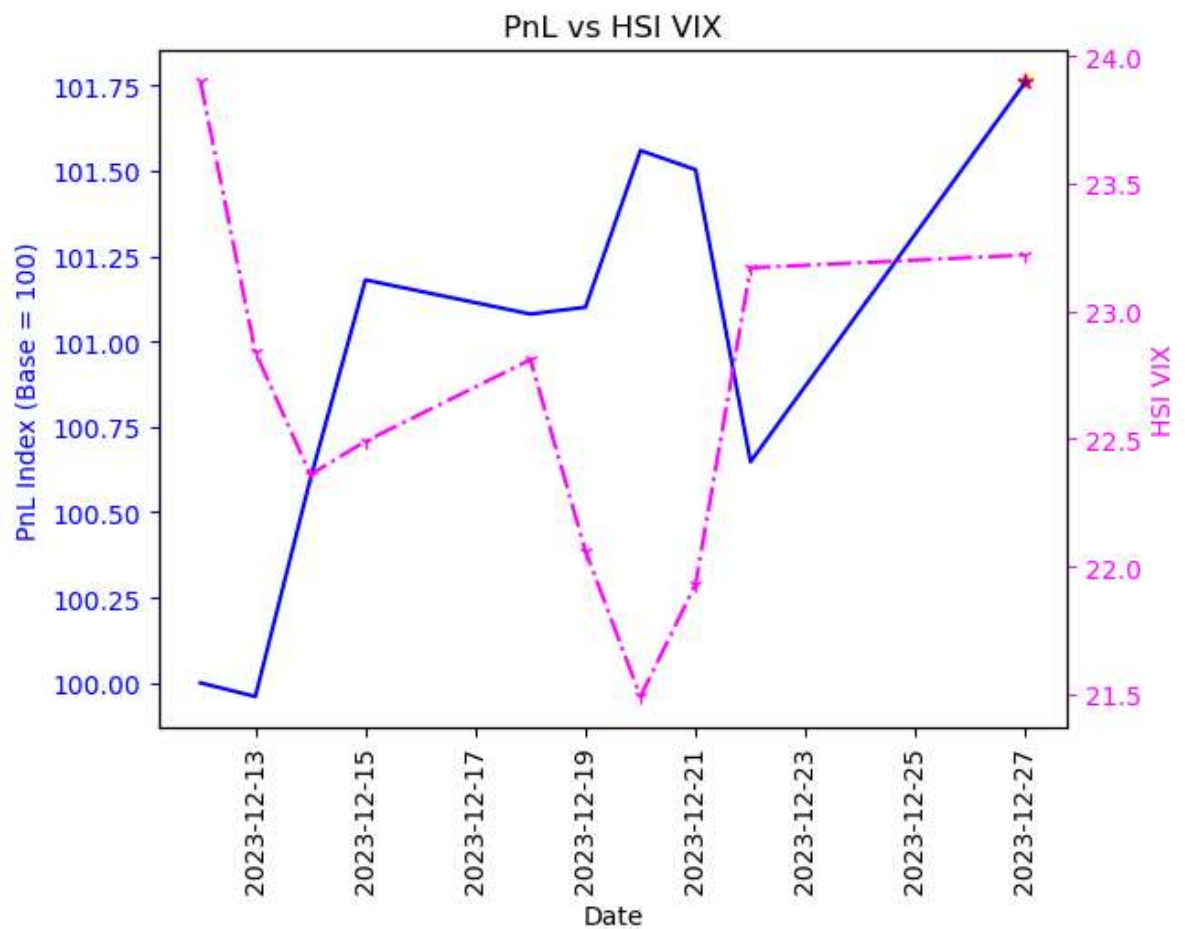
```
In [17]: #PnL vs HK's Hang Seng VIX
y3 = df["HSI VIX"]
y3
```

```
Out[17]: 0    23.90
1    22.84
2    22.36
3    22.49
4    22.81
5    22.06
6    21.49
7    21.93
8    23.17
9    23.22
Name: HSI VIX, dtype: float64
```

```
In [18]: # Create the plot and set the first y-axis (left)
fig, ax1 = plt.subplots()
plt.xticks(rotation=90)
ax1.plot(Date, y1, 'b-')
ax1.scatter(max_pnl_date, max_pnl, color='red', marker='*')
ax1.set_xlabel('Date')
ax1.set_ylabel('PnL Index (Base = 100)', color='b')
ax1.tick_params('y', colors='b')
```

```
# Set the second y-axis (right)
ax3 = ax1.twinx()
ax3.plot(Date, y3, 'fuchsia', marker='1', linestyle='-.')
ax3.set_ylabel('HSI VIX', color='fuchsia')
ax3.tick_params('y', colors='fuchsia')

# Show the plot
plt.title('PnL vs HSI VIX')
plt.show()
```



In [ ]:

In [ ]: