**Week 8 Seminar Questions**

The following operation can be implemented in the Python Jupyter Notebook or Spyder. Please sign up for a Github account and submit your codes to your own Github repo.

1. Download the daily data (from 03/11/2022 to 03/11/2023) for the S&P 500 ETF (ticker: SPY) from Yahoo Finance by using yfinance package. Get the spot price of the Index.

2. Calibrate the annualised volatility of the Index (the standard deviation of the Index returns). Compare it with the VIX data.

3. Find the call and put option price with Strike at 400 and Expiry date on 22/12/2023.

4. Compare the value with the market price.

5. If we use the VIX as volatility, what is the results for Q3 and Q4? Which one is closer to the market price?

6. Set the Strike from $375 to $425 (increasing by every $10), and Time is one week, two weeks, one month, two months, one quarter, half year and one year. Set volatility equals to the VIX value. Plot the call price 3D surface (Extra, will be covered in Week 11).