Simulating Stock Prices

1. Create a model to calculate the annualised volatility for a stock based on the last 254 and 125 days of daily closing price data. Do the calculations in two ways using the formula for volatility and using excel built-in functions or calculating standard deviation

2. Create a worksheet function to calculate the annualized volatility for a stock based on daily closing price data. The user should be able to specify how many days of data going backward from the last day, the model should use for the estimate. Do the calculations in two ways using the formula for volatility and using excel built-in functions or calculating standard deviation.

3. Develop a model to simulate the price of a stock given its current price, expected return, volatility, and the simulation step size. Make all these input variables so that the user can change them. The user should also be able to generate new price paths easily. Create a graph to show the simulated price path for the stock and its certain and uncertain components.

4. Create and document a model to show in a chart the lognormal distribution of a stock's price at some point in time in the future. The user should be able to specify the stock's current price, expected annual return and volatility and also the time horizon..