Hw5 Lookback

Description:

Use the Black-Scholes formula, Monte Carlo simulation, and the binomial tree model to calculate the European lookback put price, respectively. The American lookback put price is also required in the case of the binomial tree model.

User Manual:

Double click “Hw5 Lookback.exe”

→Click “Input” at the upper left corner of the window

→Input the following parameters in the dialogue box:

Pricing Method: Use Black-Scholes formulas (Black-Scholes), Monte Carlo simulation (Monte Carlo), or the binomial tree model (Binomial Tree). If “Monte Carlo” is checked, specify the number of outer simulation (m). If “Binomial Tree” is checked, specify the number of time steps (n) and whether the sampling is continuous (Continuous) or discrete (Discrete). If “Discrete” is checked, specify the sample size (s). (e.g., n = 100, update every two time steps => s = 50)

S: Current stock price

Smax: Realized maximum stock price

r: One-year risk-free interest rate (e.g., 10% => r = 0.1)

T: Expiration date (e.g., 6 months => T = 0.5)

Sigma: One-year volatility (e.g., 30% => Sigma = 0.3)

q: One-year dividend yield (e.g., 2% => q = 0.02)

→Click “OK” at the lower right corner of the dialogue box (or “Cancel” if you would like to exit the dialogue box)

→Calculation result will be shown on the display area of the window

→If you would like to perform another calculation, click “Input” at the upper left corner and repeat the process above. (The dialogue box will save the parameters you input last time.) Or you can click “X” at the upper right corner of the window to exit the program.