4. Sensitivity Analysis

Applying Mathematics in Finance
WISM410

Use your option pricer from Assignment 1 (or implement the Black-Scholes formula) to determine the sensitivity of the option price to the following variables:

- stock price;
- implied volatility;
- duration (expiry date);
- interest rate (note: also included in drift rate).

Plot these sensitivities versus the strike of both call and put options. Are the sensitivities different for out-of-the-money, at-the-money, and in-the-money options? Explain the findings of your analysis in a short report.