Abstract.

1. First Computing Project

1. Use sampling (i.e. 'Monte Carlo') to find the value of European Call and Put options in the 'Black-Scholes world' (see https://en.wikipedia.org/wiki/Black%E2%80%93Scholes_model for details). Use some form of control variate and measure the variance reduction compared to no control variates (https://www2.math.su.se/matstat/reports/serieb/2007/rep10/report.pdf). Compare your results to the Black-Scholes formula.

2. Use your method to price a Bermuda Call and Put option, say from time to expiry 100 days, where you can exercise every 10 days.

3. Can you use the method to price an American Call and Put?