Option Valuation Project

A report may not be longer than 20 pages (appendix is extra)
A fully working code should be emailed to cglee@mie.utoronto.ca by 11:59 pm on June 4

1. Monte Carlo Simulation

(a) (20 points) Compute the price of the following options using Monte Carlo Simulation with the sample size 250 or larger.

1. Asian call
2. Asian put
3. Lookback call
4. Lookback put
5. Floating lookback call
6. Floating lookback put

Assume that the risk-free rate is 2%, the underlying stock has the current price $100, and volatility 25%, with no dividend payments. All the options have a strike price $105 and the maturity 2 months. The simulation has the unit time = 1 week.

(b) (30 points) Also price an American put option using Monte Carlo Simulation

2. Lattice

Solve Question 1 again using the lattice approach.

(c) (20 points) Compute the price of the following options using the lattice approach.

1. Asian call
2. Asian put
3. Lookback call
4. Lookback put
5. Floating lookback call
6. Floating lookback put

Assume that the risk-free rate is 2%, the underlying stock has the current price $100, and volatility 25%, with no dividend payments. All the options have a strike price $105 and the maturity 2 months. The lattice has the unit time = 1 week.

(d) (30 points) Also price an American put option using the lattice approach.