MA473: Computational Finance: LAB 11
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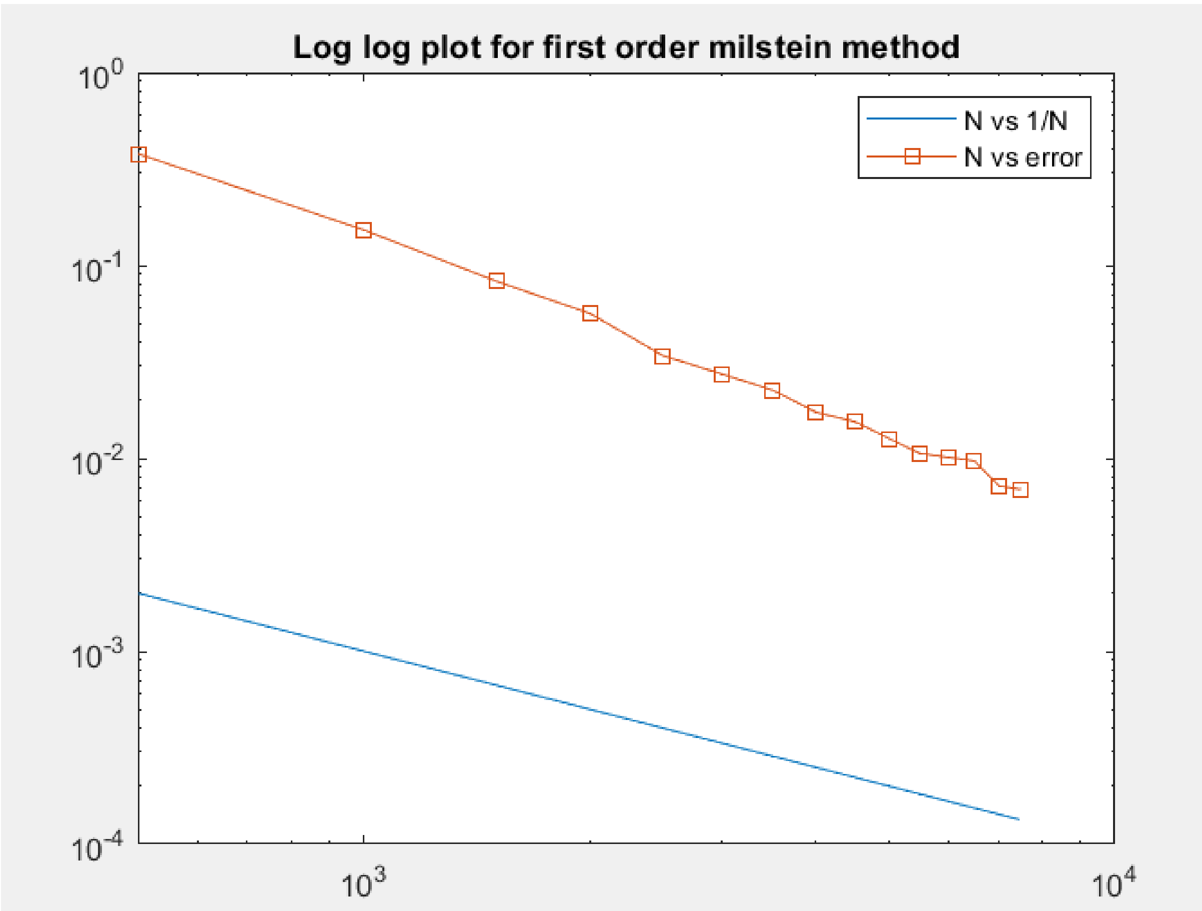
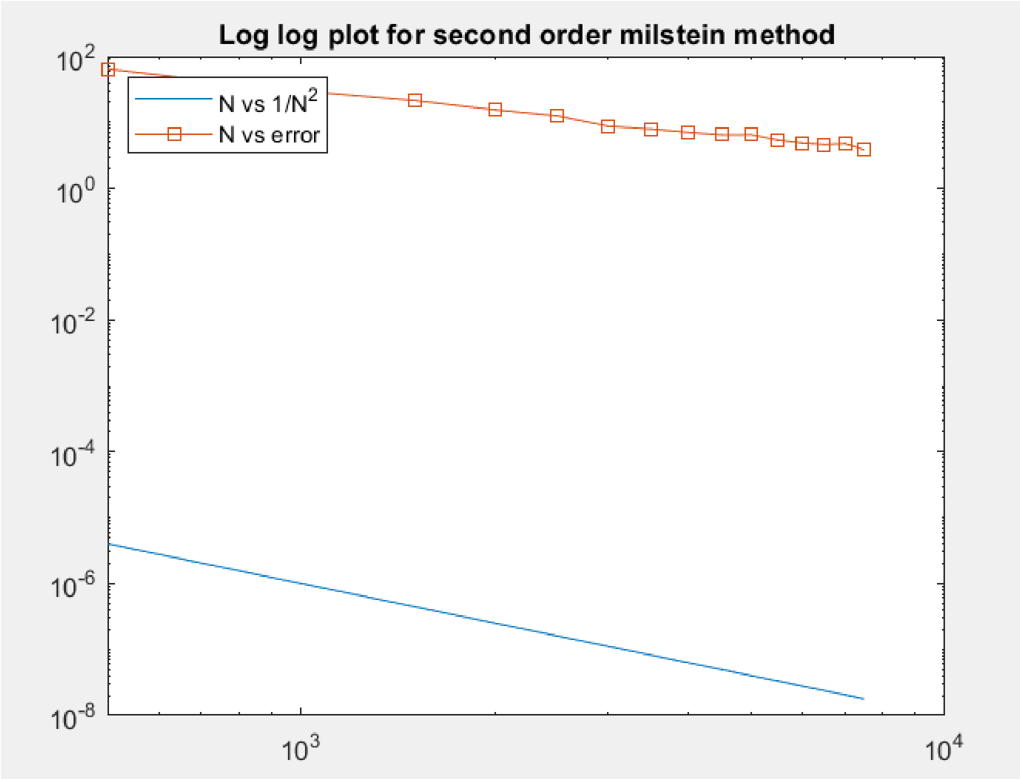
Question 1:

The exact solution of the Black-Scholes diffusion equation is:

$$X(t) = X(0)\exp((\mu - 0.5\sigma^2)t + \sigma W(t))$$

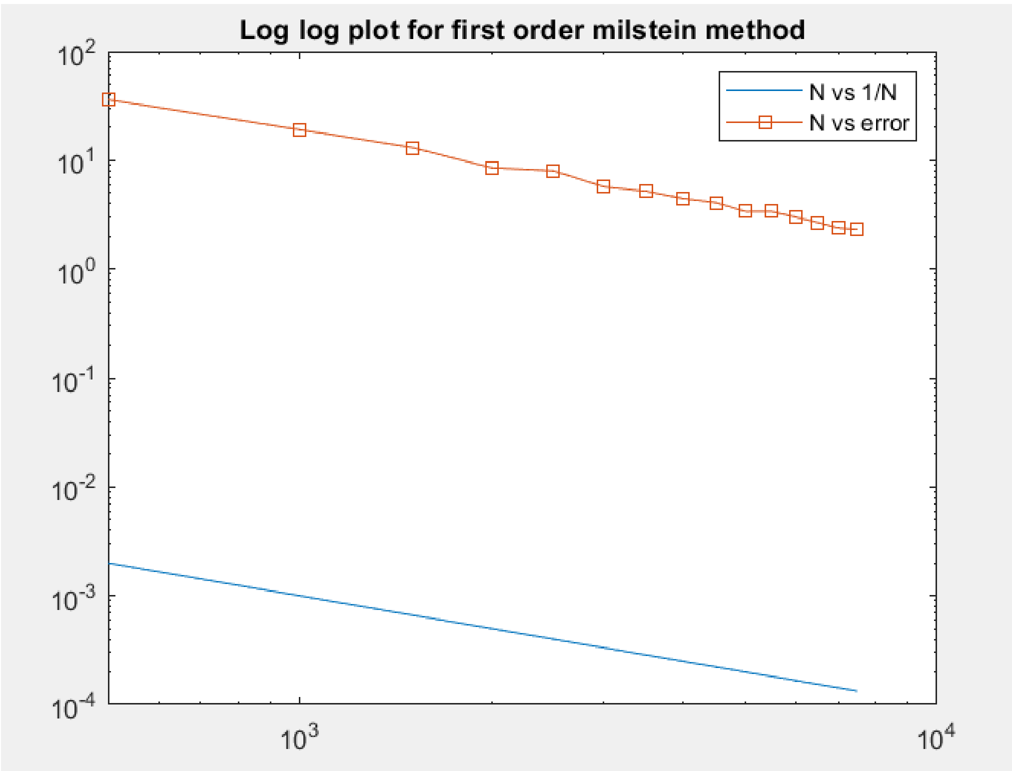
After solving the SDE using **First and Second order Milstein Scheme**, following order of convergence plot was constructed (loglog plot):

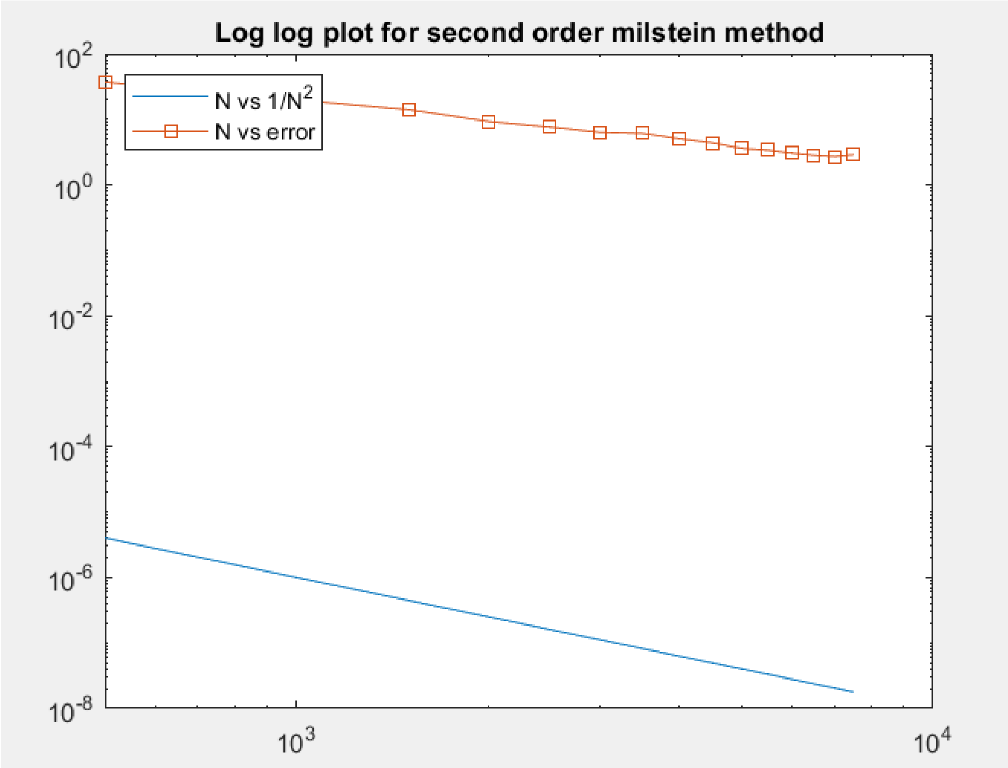




Question 2:

After solving the SDE using **First and Second order Milstein Scheme**, following order of convergence plot was constructed (loglog plot):




Log log plot for second order milstein method
N vs $1/N^2$
N vs error
10^2
10^0
10^{-2}
10^{-4}
10^{-6}
10^{-8}
10^3
10^4