LAB 9 REPORT

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Problem 01:

The requirements of the problem, the sampling mean and standard deviation (mu, sigma^2) are:
Mean : 18.74
Variance : 9.67

Problem 02:

The second implementation was performed with the help of a control variate {(K-S(t)) V 0}. To get the value of the optimum parameter (b*) for variance reduction, a second simulation having 10000 samples of each of the RVs was generated and the was utilized calculation. The control variate estimator was simulated using the optimized parameter for reduction of variance.
Mean : 18.58
Variance : 43.83

A) All the values are rounded off upto two decimal places.
B) The value of Mu and Sigma used in the BSM jump diffusion process for simulating stock prices are 0.0002981060 and 0.0222834 respectively
C) The results in the simulation will vary with time.
D) The two random variables in this simulation are ->X – Price of average price Asian put and Y- price of average price of European put option. The third RV is the estimator and is equal to X-b*(Y-E(Y)).