

# Monte Carlo Simulation Lab 08

Name: **Naman Goyal**

Roll No: **180123029**

## Problem:

To run the file run `python3 180123029_NamanGoyal_q.py` on the terminal.

- Taking  **$S(0) = 185.399994$** .
- Calculated Mean, Calculated Variance :

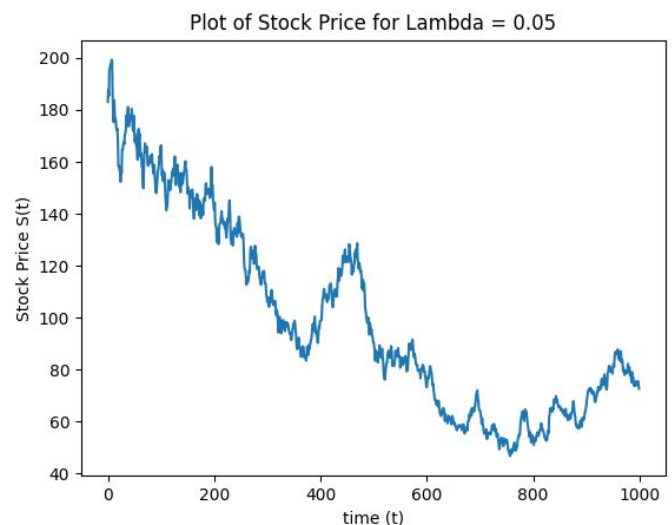
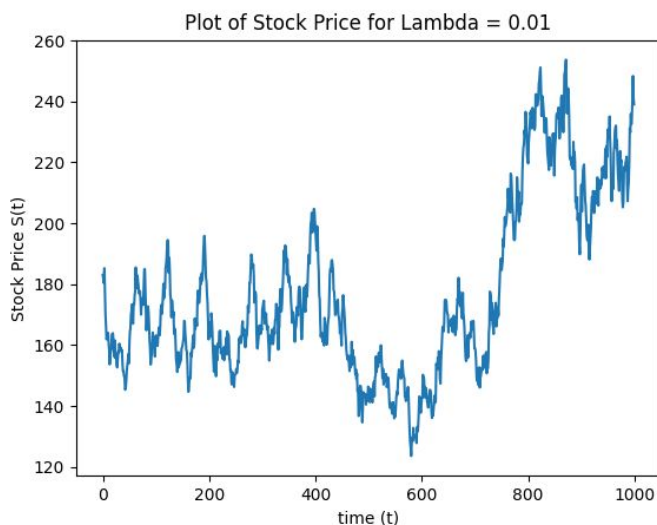
```
naman-ubuntu@naman-ubuntu: ~/Desktop/MonteCarlo_Sem5/Lab8
naman-ubuntu@naman-ubuntu: ~/Desktop/MonteCarlo_Sem5/Lab8$ python3 180123029_NamanGoyal_q.py
The calculated value of mean = 0.0002981060700200034
The calculated value of variance = 0.02228172705870555
For Lambda = 0.01
For Lambda = 0.05
For Lambda = 0.1
For Lambda = 0.2
naman-ubuntu@naman-ubuntu: ~/Desktop/MonteCarlo_Sem5/Lab8$
```

Assumption given: Stock Prices  $S(t)$  follows the jump-diffusion process.

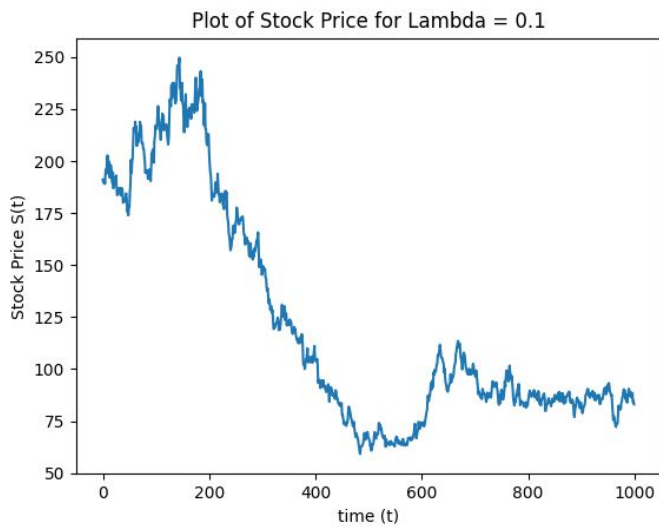
- I have used the fixed-day method to simulate stock prices.
- 4 values of Lambda were used

1. **Lambda = 0.01**

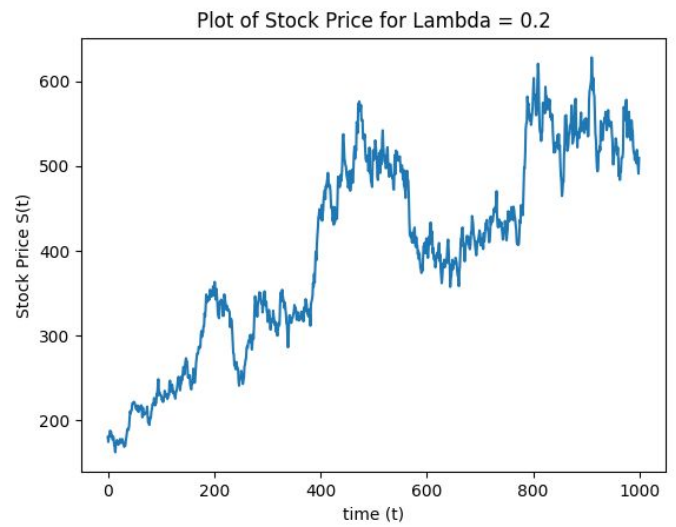
2. **Lambda = 0.05**



### 3. Lambda = 0.1



### 4. Lambda = 0.2



- Z defined is the Standard Normal Function.
- N is the Poisson Distribution.
- The values of the ratios are calculated using the LogNormal Function.