Computational Finance Lab-4

Calculate option price of real stock/index using Monte carlo simulation and Black shores model. Compare the simulated option price with the original option price.

- **Monte carlo pricing model :-**
  To understand monte carlo option pricing simulation :-
  [Option Pricing Models - How to Use Different Option Pricing Models (corporatefinanceinstitute.com)](#)

  C(t)=exp(-r*(T-t))*max(ST-K,0),
  where, T is the expiration time (in years), ST is the stock price at the end of the period

- **Black Shores pricing model :-**
  http://marcoagd.usuarios.rdc.puc-rio.br/faq4.html

Historical Stock price/Index Price data :- [Stock Prices (bseindia.com)](#)
Historical Option price data :-
[BSE Ltd-Derivatives Historical Data (bseindia.com)](#)
Historical Risk free interest rate r :- [India 10-Year Bond Historical Data - Investing.com India](#)

Option type :- Call
Maturity Date :- Latest
Expiry time :- Less than a 3 month
Interest Rate :- Consider interest rate of option writing date.(Assuming constant till expiry time.)