Matsoc winter project

MATHEMATICS IN MARKET ANALYSIS

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About Project

Project Area: Finance

Description :
Fundamental terminologies required to understand the markets, models and strategies.
Introduction to derivative contracts along with option pricing models like Black Scholes Model and Monte Carlo Simulations (in R) with their mathematical interpretations and formulas.
Understanding the mathematics behind them with concepts like random walks & martingles.

Prerequisites: Knowledge of MSE 204 course.

Timeline of Project

Week 1	Week 2	Week 3	Week 4	Week 5
9/12 - 14/12 Basic reading material about market derivatives & options	15/12-21/12 Assignment 1 Probability & Linear algebra	22/12 -29/12 Assignment 2 Basic python & R for Monte carlo simulations	30/12 - 04/1 Stochastic processes Pricing models (Black Scholes)	05/1 - 12/01 Assignment 3 Options Greek, Volatility in markets

Evaluation will be based on assignments, discussion sessions will be conducted for related doubts.
Submission of all assignments will be important for ratification.
Tentative number of mentees will be 15-20

MENTEES BENEFIT:

LEARNINGS FROM PROJECT:

This project emphasizes leveraging probability, simulations, and R programming for advanced financial modeling, providing a strong foundation for building their career in this field.