# Financial Engineering Lab (MA374)

**Name - Kartikeya Singh**
**Roll Number - 180123021**
**Lab - 05**

To run the code type **python3 180123021_Kartikeya_Singh.py** into the terminal

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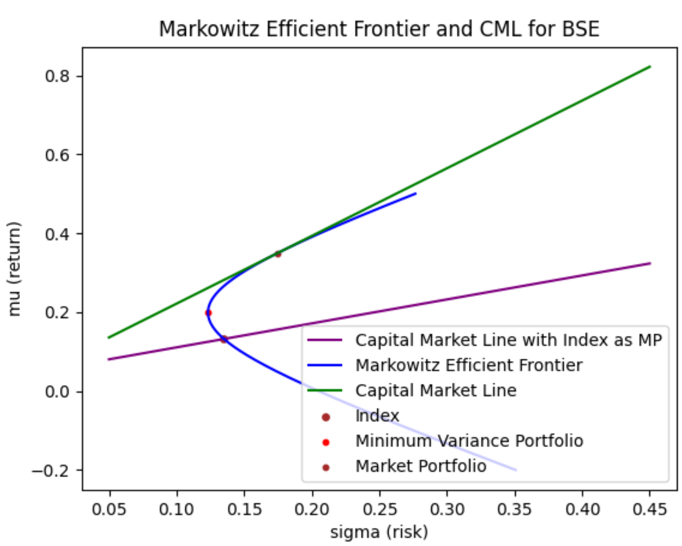
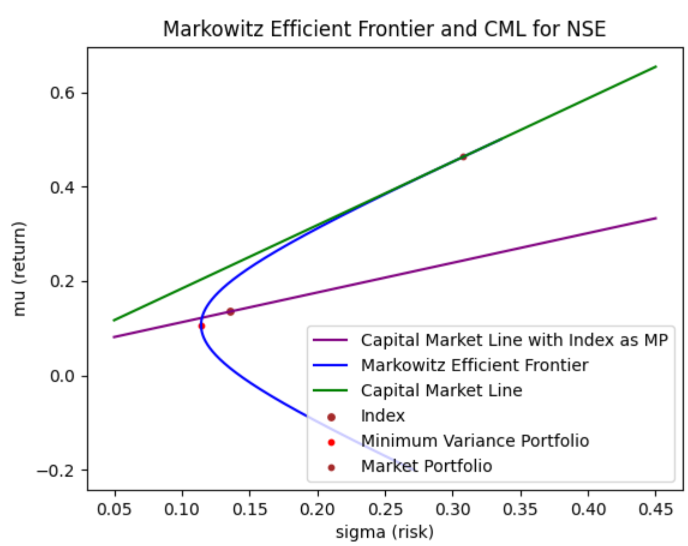
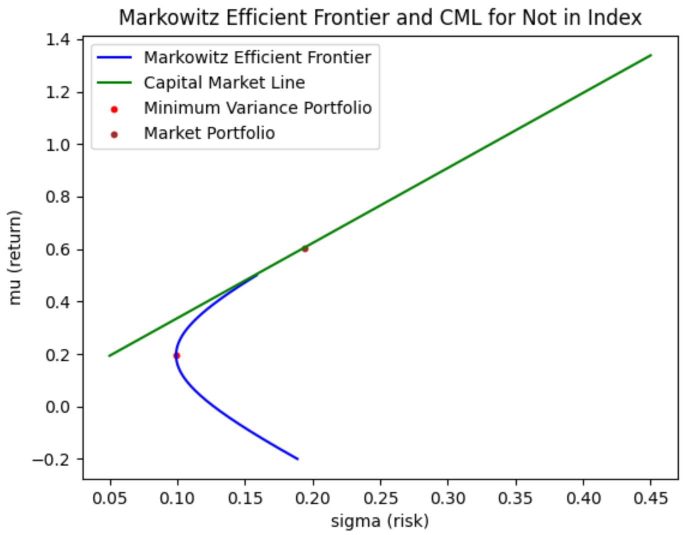
## Question 1

- Stocks included in BSE are - **[Axis Bank, Bajaj Auto, HDFC, HUL, Infosys, Reliance, SBI, Tata Steel, Sun Pharma, Asian Paints]**
- Stocks included in NSE are - **[COAL INDIA, GAIL, IOC, ICICI, ITC, NTPC, WIPRO, ADANIPORTS, CIPLA, JSWSTEEL]**
- Stocks not included in BSE/NSE are - **[ZEEL, LUPIN, NMDC, JSWENERGY, TRENT, UBL, PFIZER, WHIRLPOOL, VGUARD, MFSL]** (These stocks are neither in BSE nor in NSE)

The Markowitz Frontier along with the Capital Market Line(CML) are plotted -



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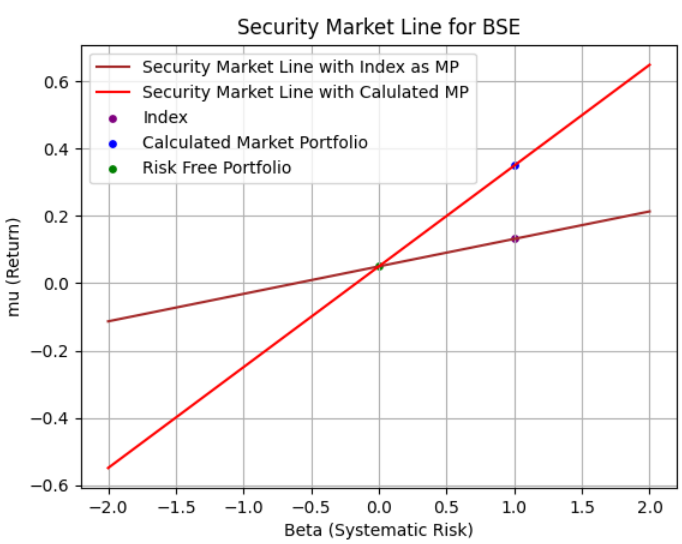
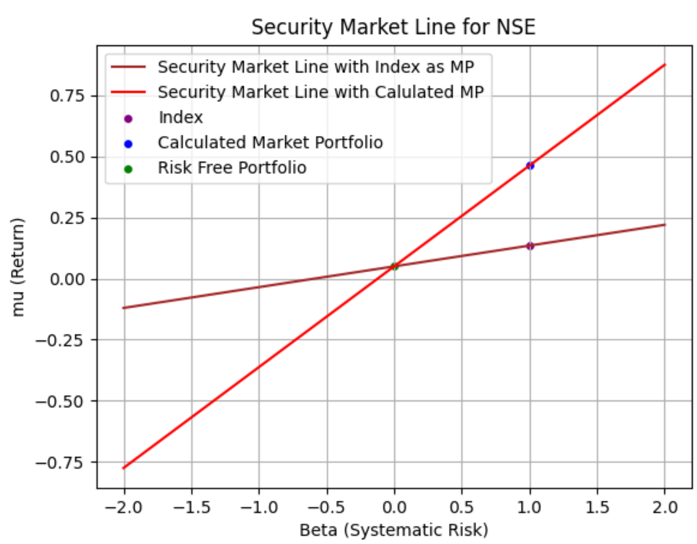
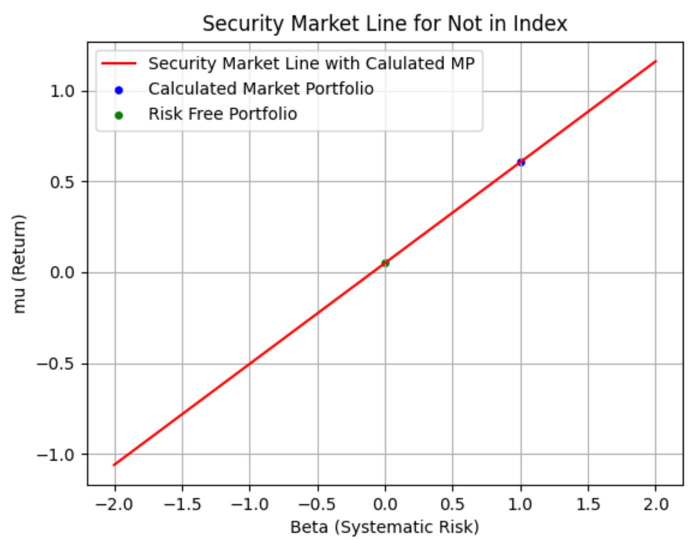
## Question 2

Taking the riskfree rate to be 5%, the security market lines are plotted as -



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## Question 3

The values of Beta Calculated for stocks included in the Index (BSE) are -

| Company | Beta Value |
|---|---|
| Axis Bank | 1.443215 |
| Bajaj Auto | 0.946130 |
| HDFC | 0.996718 |
| HUL | 0.867601 |
| Infosys | 0.612209 |
| Reliance | 1.220432 |
| SBI: | 1.719913 |
| Tata Steel | 1.098324 |
| Sun Pharma | 0.222708 |
| Asian Paints | 0.984537 |

The values of Beta Calculated for stocks included in the Index (NSE) are -

| **Company** | **Beta Value** |
|---|---|
| COAL INDIA | 0.719322 |
| GAIL | 0.916720 |
| IOC | 0.932760 |
| ICICI | 1.483899 |
| ITC | 0.798437 |
| NTPC | 0.702718 |
| WIPRO | 0.433994 |
| ADANIPORTS | 1.580559 |
| CIPLA | 0.518862 |
| JSWSTEEL | 0.664602 |