**Mathematical Trading Strategies**

**Assignment 1**

|  | S&P 500 | NASDAQ | FTSE100 | Nikkei 225 Index (Japan) | DAX Index (Germany) |
| --- | --- | --- | --- | --- | --- |
| Cumulative returns | 1.226743540504597 | 0.9740700296854294 | 0.44022202939109056 | -0.3446669380129068 | -0.2855464592064456 |
| Volatility | 0.17816252244416103 | 0.20665950343926331 | 0.1629884576887922 | 0.2086930448438509 | 0.2030556778234404 |
| Max Drawdown | -0.3392496000265327 | -0.36395279909120204 | -0.3660552329617581 | -0.31798896508501917 | -0.38779389651624485 |
| Sortino Ratio | 0.27279471087484974 | 0.20323595935218078 | 0.01087055423391867 | 0.5354136295266897 | -0.42825548777793543 |
| Sharpe Ratio | 0.21540355183524396 | 0.15447612767203073 | 0.008406440457095448 | -0.4232470729139694 | -0.3189421883268503 |

|  | Apple | Microsoft | Samsung | IBM | Google |
| --- | --- | --- | --- | --- | --- |
| Cumulative returns | 1.46724243 | 2.2828096441274397 | 0.19636906060788317 | 1.5615523242985323 | 0.508908466388688 |
| Volatility | 0.28632274215768444 | 0.261666136486592 | 0.392265150191745 | 0.2261851463289666 | 0.2725051066868483 |
| Max Drawdown | -0.4379717171126689 | -0.3714848530549334 | -1.5130567449793222 | -0.43720036150650343 | -0.4460184987847865 |
| Sortino Ratio | 0.35357884196774453 | 0.5052995532953819 | -2.4340057789013585 | 0.3967609377501605 | 0.08823485192096063 |
| Sharpe Ratio | 0.24002677838408978 | 0.3500451232644255 | -0.7242067065046871 | 0.2735459606569344 | 0.06317442287561696 |