**Task-6**

(i) **The following report analyzes the performance of the firm’s 6 customers A, B, C, D, E and F.**

The below contains the details of Investors, stocks invested and their respective returns.

| **Name of Investor** | **Stock - 1** | **Stock - 2** | **Total Returns** | **Standard Deviation of Returns**  **(Risk)** | **Correlation of Returns of Stock 1&2** |
| --- | --- | --- | --- | --- | --- |
| A | HDFC | Nil | 0.04% | 1.52% | N/A |
| B | ONGC | Nil | 0.18% | 2.31% | N/A |
| C | SpiceJet | Nil | -0.15% | 2.69% | N/A |
| D | HDFC | ONGC | 0.09% | 1.46% | 0.62158 |
| E | ONGC | SpiceJet | -0.01% | 1.88% | -0.34798 |
| F | HDFC | SpiceJet | -0.07% | 1.59% | -0.08840 |

Here investors A, B, and C have single asset portfolios and D, E, and F have two-asset portfolios. And investor B has the highest return of ***0.18%*** and C has the lowest return of ***-0.15%.***

Modern portfolio theory (MPT) asserts that an investor can achieve diversification and reduce the risk of losses by reducing the correlation between the returns of the assets selected for the portfolio.

It is indeed true in the case of these six investors. The single asset investors did not diversify their portfolio and this resulted in taking higher risk and lower return. It is indeed visible as investor C has the lowest return and the riskiest portfolio among the 6 investors.

The performance of investors having two asset portfolios are as follows

* **Investor D**:-

Investor D has diversified his portfolio by investing in HDFC and ONGC. Even Though his return was***0.09%*** as compared to investor B’s ***0.18%***, he has reduced the standard deviation of his portfolio(i.e risk) to ***1.46%*** which is the lowest among the 6 investors.

* **Investor E**:-

Investor E has diversified his portfolio by investing in ONGC and SpiceJet. Through diversification he had improved his returns when compared to stocks of investor C and reduced risk when compared to stocks of both investor B and C.

* **Investor F**:-

Investor F has diversified his portfolio by investing in HDFC and SpiceJet.Through diversification he has improved his returns when compared to stocks of investor C and reduced risk when compared to stocks of both investor A and C.

Overall, it can be said that diversification indeed increases returns and reduces risk of portfolio subjected to certain conditions.

(ii) This project is the product of our collective effort. We all planned this project in Google meet and executed it in Google Docs and Sheets over the span of four meetings.

It was quite challenging at first as we do not have deep knowledge regarding share prices. So we did some research and gained knowledge about the same.

Then, we shared the tasks as following:-

* Mucharla Harsha Vardhan - Task 1, Task 5(Investor D) and research
* Mrinmayee Hole - Task 2 , Task 5(Investor E) and

coordination

* Deepali Gupta - Task 3, Task 5(Investor F) and editing

Common Tasks:- Task 4 and Task 6

At first sight, the tasks seemed quite difficult but after sufficient research it was quite the opposite. They were interesting and practical. We believe that this was due to our efficient planning and disciplined execution.