Individual Contribution Report [Bimal C Biju – 20059265]

My role in this group project was two-fold, focusing on bridging the gap between the backend data processing and the end-user's analytical experience. My primary responsibilities were:

1. Data Visualization and Dashboard Development: I was responsible for the entire Tableau development lifecycle, from conceptualizing the visualizations to building the final interactive dashboard.

2. Technical Report Compilation and Authoring: I served as the lead author for the final technical report, responsible for collecting all project components from team members, structuring the document, and ensuring a cohesive and professional narrative.

1. Data Visualization using Tableau

My contribution in this area was to **translate** the business requirements into a functional and insightful analytical tool. This involved more than just creating charts; it required a deep understanding of the data and the key questions a business user would ask.

Conceptual Design: I began by designing a dashboard concept centred around a Sales Manager persona. I identified four key analytical areas that would provide the most value: high-level **performance tracking (KPIs), promotional effectiveness, geographic sales distribution, and individual employee performance**. This led to the selection of the four specific visualizations:

- KPI Scorecards: For an **immediate**, at-a-glance view of **business health.**

- Discount Strategy Effectiveness Chart: A dual-axis chart to perform a sophisticated analysis **comparing** sales volume with average order value to determine the **true ROI of discounts**.

- Geographic Sales Map: A bubble map to intuitively display sales hotspots, using both size and colour to encode two different metrics [Total Sales and Average Order Value] for deeper insight.

- Employee Performance Leaderboard: A dynamic bar chart to not just rank employees but to measure their performance against a flexible, user-defined target.

Implementation and Interactivity: I built each of these visualizations from scratch in Tableau, connecting directly to our SQL Server data warehouse. A significant part of my work was implementing the interactive features that make the dashboard a powerful analytical tool:

- Calculated Fields: I created custom calculated fields, such as Discount Category and Average Order Value, to transform raw data into meaningful business metrics.

- Parameters: I implemented the Sales Target parameter, which allows a manager to input a sales goal directly into the dashboard and see the **reference line** on the employee chart **move dynamically**.

- Action Filters: I configured dashboard actions to create a guided analytical experience. For example, I set up an action so that clicking on a discount category in one chart would filter the map and employee leaderboard, allowing a user to seamlessly investigate the impact of a specific promotion.

- Formatting and UX: I was meticulous about the formatting, ensuring that tooltips were clean, labels were clear, and the overall layout was intuitive and professional. I handled technical challenges such as resolving null location data and ensuring KPI text was formatted correctly within its container.

Through this process, I transformed the data residing in the warehouse into a tangible, user-friendly tool that provides clear, **actionable insights**.

2. Technical Report Compilation and Authoring

My second major contribution was to manage and produce the final technical report. As the project involved distinct parts handled by different team members (e.g., ETL, database setup, Neo4j analysis), my role was to unify these components into a single, coherent document.

Structuring and Compilation: I took the lead in structuring the report according to the assessment brief. I created a shared document structure and was responsible for collecting the written sections, screenshots, and code appendices from all team members. This involved consistent communication to ensure all required elements were submitted on time.

Authoring and Editing: I personally authored several key sections of the report, including the Introduction, the Dashboard Summary, the descriptions of the Tableau Visualizations, and the explanations for the ETL screenshots and SQL scripts. My goal was to create a clear narrative that explained not just **what** we did, but **why** we did it from a business and technical perspective.

Furthermore, I edited the entire document for **consistency in tone, formatting, and terminology**. I revised sections to ensure they flowed logically from one to the next, creating a professional and easy-to-read report that accurately reflects the full scope and technical depth of our project. This role was crucial in ensuring that our collective work was presented as a unified and high-quality final submission.