**Brit College of Engineering & Technology (BCET)**

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**Professional Certificate in Business Data Analytics (Introduction Level)**

**PORTFOLIO DESIGN, IMPLEMENTATION & EVALUATION**

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| INTRODUCTION | I am Shaun Mia from Bangladesh. I am a passionate data analyst with a background in computer science. I work on real-life projects using Excel, Power BI, Python, and SQL to turn data into useful insights. I enjoy creating dashboards and solving problems with data. I also have experience in machine learning and did research using deep learning to detect mango leaf diseases. I am a quick learner, a good team player, and always ready to take on new challenges. |
| RESULTS AND IMPACT  (from POWER BI Desktop) | **Project-1: Chocolate Product Sales Tracker**  The Chocolate Product Sales Tracker Power BI project visualizes sales data, including total amount ($6.18M), boxes shipped (177K), and average order value ($5.65K) across various salespersons and regions. It also provides insights into monthly sales trends, product performance, and year-over-year comparisons from January 2022 to August 2022.  **KPI & slicer filter:** The KPIs for the Chocolate Product Sales Tracker show a total sales amount of $6.18M, total boxes shipped at 177K, and an average order value of $5.65K, reflecting revenue, distribution volume, and transaction size. The slicer filter, set to "Sales Person: All," allows users to filter data by individual salespersons like Ragon, Prophet, or Delo for more granular insights.    Image1.1: KPI& slicer  **Sales by Month:** The sales by month chart shows a peak of $899K in January 2022, declining to $699K in February, and fluctuating with a high of $865K in June 2022 before dropping to $743K by August 2022. Notable peaks include $803K in July 2022 and $753K in May 2022, with a low of  $674K in April 2022.    Image1.2: Sales by Month  **Total Sales Decline by Product for February 2022:** The Total Sales Decline by Product for February 2022 visual in Power BI shows Milk Bars with a $896K increase, while 85% Dark Bars and Baker’s Choco Chips saw gains of $44K and $35K, respectively. Conversely, After Nines dropped by $176K, with 99% Dark & Pure, Baker’s Choco Chips, and 85% Dark Bars declining by $50K, $49K, and $40K, respectively, alongside a $699K decrease in the "Other" category.    Image1.3: Total Sales Decline by Product for February 2022  **Country Wise Sales:** The country-wise sales chart shows Australia leading with $1137K, followed closely by the UK at $1052K and India at $1046K. USA records $1035K, while Canada and New Zealand trail with $963K and $950K, respectively.    Image1.4: country-wise sales  **product-wise sales:** The product-wise sales chart indicates Smooth Silky Salty leading with $350K, followed by 50% Dark Bites at $342K and White Choc at $329K. Peanut Butter Cubes Eclairs, 99% Dark & Pure, 85% Dark Bars, Organic Choco Syrup, and Spicy Special Slims follow with $325K, $312K, $300K, $299K, $295K, and $293K, respectively.    Image1.4: Product-wise sales    **Salesperson wise Breakdown**: The Salesperson-wise Breakdown reveals Wilone O'Keift leading with 34 orders, 4033 boxes shipped, and $138523 in total sales, followed by Dotty Strutley with 36 orders, 6653 boxes, and $196024. Other top performers include Camilla Castle with $196616 and Mallorie Waber with $200952, while Ches Bonnell ranks lowest with 48 orders, 7522 boxes, and $320901 in sales.  Image1.5: **Salesperson wise Breakdown**  **Project-2: Global Superstore Performance Analysis**  The Global Superstore Performance Analysis project delivers a comprehensive, data-driven dashboard to optimize sales, profitability, and operational efficiency across regions and product categories.  **KPI and Navigation Pages:**  The Global Superstore Performance Overview dashboard delivers key metrics like Total Sales (12.64M), Total Profit (1.47M), and Average Shipping Cost (26.38) for strategic insights. Its navigation page enables seamless switching between Overview and Detailed tabs for an intuitive user experience.    Image2.1: KPI& Navigation Pages  **Furniture Returns Performance Matrix:**  The Furniture Returns Performance Matrix details sales and profit for various Furniture products, all marked as returned, identified by Product ID. It shows total sales of 12,642,501.91 and a total profit of 1,467,457.29, revealing significant variability in profitability, with some products incurring losses.  Image2.1: Furniture Returns Performance Matrix  **Top 5 Market by Sales:** The "Top 5 Markets by Sales" chart displays total sales and profit for key markets, with APAC leading at 3.6M in sales and 4.02M in profit. It highlights EU, US, LATAM, and EMEA as the top performers, showing varying profitability across regions.    Image2.3: Top 5 Market by sales  **Profit by Category:** The "Profit by Category" donut chart illustrates profit distribution across Technology (3.79M, 29.96%), Furniture (4.74M, 37.53%), and Office Supplies (4.11M, 32.52%). It highlights Furniture as the most profitable category, providing a clear comparison of category performance.    Image2.4: Profit by Category  **Total Sales by Product Name:** The "Total Sales by Product Name" bar chart ranks the top five products by sales, with Apple Smart leading at 87K, followed by Cisco Smart (76K) and Motorola Smart (73K). Nokia Smart and Canon Image trail at 72K and 62K, respectively, highlighting top-performing products in the Technology category.    Image2.5: Total Sales by Product  **Total Sales by Region:** The "Total Sales by Region" map visualizes sales distribution across regions, with Europe and Asia showing the largest bubbles, indicating higher sales volumes. North America, South America, and Africa also contribute, with varying sales intensities, providing a global sales performance overview  .  Image2.6: Total Sales by Region  **Monthly Sales Performance Matrix:** The Monthly Sales Performance Matrix (2011-2014) tracks sales across months from 2011 to 2014, with totals peaking in November 2014 at 555,279.03. It shows a grand total of 4,299,865.87, highlighting seasonal trends and year-over-year growth in sales performance.    Image2.7: Monthly Sales Performance Matrix  **Donut chart:** The "Total Sales by Category" donut chart displays sales distribution with Furniture leading at 4.74M (37.53%), followed by Technology at 3.79M (29.96%), and Office Supplies at 4.11M (32.52%), highlighting category performance. The "Orders by Order Priority" donut chart shows medium priority dominates with 29.43K (57.39%), followed by High at 15.5K (30.22%), Critical at 3.93K (7.67%), and Low at 2.94K (5.73%), indicating order urgency trends.  Image2.7: Monthly Sales Performance Matrix  **Total Sales by Sub-Category:** The "Total Sales by Sub-Category" bar chart identifies top-performing sub-categories, with Phones leading at 1.71M, followed by Copiers (1.51M), Chairs (1.50M), Bookcases (1.47M), and Storage (1.13M). Accessories, Machines, and Tables trail at 0.78M, 0.78M, and 0.76M respectively, highlighting key revenue drivers within categories.    Image2.8: Total Sales by Sub-Category  **Total Profit by Country:** The "Total Profit by Country" bar chart ranks countries by profit, with the United States leading at 0.29M, followed by China at 0.15M and India at 0.13M. The United Kingdom, France, Germany, Australia, and Mexico each contribute around 0.10M to 0.11M, while Spain trails at 0.05M, highlighting key profit-generating markets.    Image2.9: Total Profit by country |
| RESULTS AND IMPACT  (from Tableau Desktop) | **Project: Superstore Sales Analysis**  This Tableau dashboard titled "Superstore Sales Analysis" provides insights into profit distribution across U.S. states, monthly sales trends by category, and detailed sales by sub-category. It highlights performance variations by year, state, and product type, enabling a comprehensive view of business performance.  **Monthly Sales:** This Tableau line chart shows monthly sales trends for Furniture, Office Supplies, and Technology from January to December, with each category displayed in separate panels. The color-coded lines reveal how sales fluctuate monthly—highlighting peaks in March, September, and December, especially in Technology and Furniture.    Image3:1: Monthly Sales  **Profit Map:** This Profit Map visualizes state-wise profit performance, showing California ($76,381) and New York ($74,039) as top earners, while Texas (-$25,729) and Ohio (-$16,971) face major losses. Bubble sizes represent profit magnitude, highlighting regional profit disparities across the U.S.    Image3:2: Profit Map  **Sales by Category:** The Tableau visual shows sales by sub-category across Furniture, Office Supplies, and Technology, with Chairs (Furniture) and Phones (Technology) leading at over 300K each, while Fasteners (Office Supplies) have the lowest sales at under 20K. Bookcases and Furnishings in Furniture, Storage in Office Supplies, and Machines in Technology also show significant sales, ranging from 100K to 200K. |
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| Conclusions | * I learned the fundamentals of Power BI and Tableau, including how to create basic and intermediate-level dashboards, starting with a simple Power BI dashboard and progressing to a more advanced intermediate one, as well as a basic Tableau dashboard. * The sessions covered the step-by-step process of creating an account on Tableau Public, including how to build a dashboard and export it as a PDF for sharing. * I gained insights into the Research and Development focus, particularly how to write a research paper, structure it properly, and the steps required to publish it in a reputable journal. * The Masterclass provided an opportunity to enroll in a paid advanced course, where the best research paper submitted would be published with funding support for the publication fees. * I also understood how to analyze data trends using the dashboards, such as the monthly sales fluctuations in Tableau and sales by sub-category in Power BI, enhancing my data visualization skills. * The importance of iterative design in dashboard creation was emphasized, ensuring clarity and usability for end-users through proper chart selection and layout. * Finally, I learned the value of combining technical skills (Power BI/Tableau) with research skills to produce impactful data-driven papers for professional growth. |