

MGS 628 Data Visualizations for Business Insights

Final Report

Team Members:

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Entity Name	Entity Type	What does the visualization do?	What decision does it allow the stakeholder to make?	Team member responsible for the work
Genre by Yearly Sales	Visualization Sheet	Displays sales across genres, focusing on Sci-Fi/Fantasy performance.	Guides planning for future investments in popular genres like Sci-Fi/Fantasy.	Manish Chetlapally
Monthly Trends in Discounts for Sci-Fi/Fantasy Genre Sales	Visualization Sheet	Tracks how discounts impact sales trends for Sci-Fi/Fantasy books.	Helps stakeholders determine if discounts are effective in increasing sales and customer engagement.	Manish Chetlapally
Number of Book Sales in Sci-Fi	Visualization Sheet	Summarizes total sales of Sci-Fi books by title.	Identifies top-selling Sci-Fi books to inform stock decisions and marketing strategies.	Manish Chetlapally
Count of Ratings by Genre	Visualization Sheet	Displays the number of ratings for different books within the Sci-Fi/Fantasy genre.	Helps gauge customer interest and satisfaction levels with Sci-Fi/Fantasy books.	Manish Chetlapally

MGS 628 Data Visualizations for Business Insights

Final Report

Sci-Fi/Fantasy Genre: Sales and Customer Trends	Dashboard 1	Combines yearly sales, monthly discount impacts, book sales by title, and customer ratings to provide a comprehensive view.	Enables stakeholders to analyze sales trends, customer satisfaction, and discount efficiency for informed strategic decisions.	Manish Chetlapally
Rating Distribution Across Genres	Visualization Sheet	Displays how customer ratings are distributed across genres.	Guides stakeholders in identifying genres with higher customer satisfaction.	Manish Chetlapally
Books by Selected Genre and Author	Visualization Sheet	Filters books by specific genres and authors, showing relevant details.	Helps stakeholders decide which authors and genres to promote based on customer preferences.	Manish Chetlapally
Top Authors in Sci-Fi/Fantasy: Sales and Ratings	Visualization Sheet	Displays top authors in Sci-Fi/Fantasy based on sales and ratings.	Guides collaborations with top-performing authors and informs marketing campaigns.	Manish Chetlapally
Top Books by Selected Author and Genre	Visualization Sheet	Highlights top books for a given author and genre, including sales and customer ratings.	Helps stakeholders target specific books and authors for promotional efforts.	Manish Chetlapally
Insights into Book Ratings,	Dashboard 2	Combines customer ratings,	Enables stakeholders to	Manish Chetlapally

MGS 628 Data Visualizations for Business Insights

Final Report

Authors, and Top Titles by Genre		top authors, and best-selling titles for each genre to provide comprehensive insights.	understand key drivers of customer engagement and prioritize investments in high-performing books or authors.	
Cluster Analysis of Genres by Ratings and Sales	Visualization Sheet	Groups genres into clusters (high, medium, low performance) based on ratings and sales.	Helps identify genres with high growth potential and those requiring improvement.	Manish Chetlapally
Top 3 and Second Top 3 Books by Checkouts (Grouped)	Visualization Sheet	Highlights the most and second-most popular books by the number of checkouts.	Guides stakeholders to focus on promoting top-performing books to increase customer engagement.	Manish Chetlapally
Genre Analysis by Checkouts: Using Sets for Key Insights	Visualization Sheet	Analyzes the number of checkouts across genres, with insights grouped into specific categories using sets.	Helps stakeholders identify the most popular genres and allocate resources accordingly.	Manish Chetlapally
Customer Insights Dashboard: Genre Performance, Ratings, and Checkouts	Dashboard 3	Combines clustering, book checkout analysis, and genre insights into a single view for a comprehensive analysis of performance.	Supports strategic decision-making by providing a holistic view of customer preferences and genre performance.	Manish Chetlapally

MGS 628 Data Visualizations for Business Insights

Final Report

Customer Insights Storyboard	Storyboard	It consists of three dashboards:	a) Identifies which genres, books, and authors are most profitable and popular among customers.	Manish Chetlapally
		Customer Insights Dashboard: Genre Performance, Ratings, and Checkouts	b) Highlights trends in genre performance, ratings, and checkout data to inform decisions on promotions and inventory management.	Manish Chetlapally
		Insights into Book Ratings, Authors, and Top Titles by Genre	c) Recognizes top authors and titles by genre, helping stakeholders prioritize marketing efforts and partnerships with high-performing authors.	Manish Chetlapally
		Sci-Fi/Fantasy Genre: Sales and Customer Trends	d) Provides an in-depth view of sales, discounts, and ratings trends in the Sci-Fi/Fantasy genre, guiding tailored campaigns and pricing strategies.	Manish Chetlapally
				Nikhil Rao Janagama
Total Checkouts by states and its cities	Bar Chart	Shows total checkouts by state and city.	Identify key regions to allocate resources effectively.	Nikhil Rao Janagama
Most Popular Genres in Seattle	Bubble Chart	Highlights the top genres (e.g., Sci-Fi/Fantasy, Mystery) based on checkouts in Seattle.	Focus resources and marketing efforts on the highest-performing genres in Seattle.	Nikhil Rao Janagama

MGS 628 Data Visualizations for Business Insights

Final Report

Checkout Trends Over Time by Genre	Line graph	Trends of total checkouts across time for different genres.	Identifies genre performance fluctuations over time, aiding in demand forecasting and supply optimization.	Nikhil Rao Janagama
Top Publishers by Genre in Seattle	Bar Graph	Displays publishers' performance in Seattle categorized by genre.	Guides publisher-specific marketing or distribution strategies, targeting high-performing publishers.	Nikhil Rao Janagama
Regional Sales by State and City	Stacked Bar Chart	Highlights the contribution of cities within each state to total sales.	Helps regional managers allocate resources efficiently to high-performing regions.	Nikhil Rao Janagama
Top Genres by Regional City	Tree Map	Displays most popular genres in each city within a region.	Identifies genre preferences on a regional level to tailor offerings to city-specific demands.	Nikhil Rao Janagama

MGS 628 Data Visualizations for Business Insights

Final Report

City Growth Rate Comparison	Bar Graph	Compares city-level growth rates of checkouts.	Evaluates growth patterns, enabling focus on emerging cities with high growth or decline.	Nikhil Rao Janagama
Top Authors by City Performance	Scatter Plot	Shows performance of authors across cities based on checkouts.	Highlights author popularity per city, supporting local author promotions or city-based events.	Nikhil Rao Janagama
Checkout Trends Over Time by City	Line Graph	Displays checkout patterns over time for different cities.	Evaluates temporal patterns in each city, helping identify peak checkout periods for optimized resource allocation.	Nikhil Rao Janagama

MGS 628 Data Visualizations for Business Insights

Final Report

Geographic Performance and Clusters	Map Visualization	Highlights cities and clusters based on performance.	Provides an overall geographical performance view, guiding location-based initiatives.	Nikhil Rao Janagama
Geographic Distribution and Checkout Analysis	Dashboard 1	Provides a comprehensive overview of geographic performance, author trends, and genre popularity with regional focus.	Offers region-specific operational and marketing strategy recommendations for state managers.	Nikhil Rao Janagama
Regional Growth, Trends, and Key Contributors	Dashboard 2	Maps city clusters, compares growth rates, and highlights top-performing authors and trends by city.	Enables targeted investments in fast-growing cities and better genre-author alignment.	Nikhil Rao Janagama
Regional Sales Performance and Top Genre Insights	Dashboard 3	Integrates city sales data and genre popularity in one view for	Aligns resources to regions and genres that drive the most sales for profitability.	Nikhil Rao Janagama

MGS 628 Data Visualizations for Business Insights

Final Report

		holistic insights.		
Unveiling Regional Insights: Growth, Trends, and Key Contributors Across States and Cities.	STORY	Combines regional sales, growth trends, genre performance, and author contribution across states and cities.	Provides a holistic understanding of regional performance, enabling state managers to allocate resources effectively, target high-growth areas, and tailor inventory/marketing strategies based on genre and author popularity.	Nikhil Rao Janagama
		a) Allows us to decide which products/sectors/categories are not profitable? And in what cities?	The visualizations highlight underperforming cities like Edinburgh, where checkout volumes are low, and genres such as Memoir and Nonfiction that show minimal contribution in these regions. On the other hand, cities like Seattle outperform with high demand for SciFi/Fantasy and Romance. These insights suggest reallocating inventory away from less profitable regions and focusing on promoting high-performing genres in successful markets.	Nikhil Rao Janagama

MGS 628 Data Visualizations for Business Insights

Final Report

		b) Are we giving too much discount? What should we do?	Cities like Dunedin, with high growth rates, indicate discounts are driving checkouts effectively, while low-growth regions like Edinburgh show limited returns. Flat trends in some cities suggest over-discounting without significant impact. A more targeted discount strategy should be implemented, focusing on high-potential cities like Seattle and reducing discounts in underperforming regions to optimize returns.	Nikhil Rao Janagama
		c) Who are the top customers, and what do they buy?	The top-performing authors and publishers, such as Bianca Thompson and Etaoin Shrdlu Press, dominate in Seattle, especially in high-demand genres like SciFi/Fantasy and Mystery. In smaller cities like Friday Harbor, fewer high-performing authors are present. Leveraging these insights, targeted marketing campaigns and partnerships with key authors and publishers can drive customer engagement and boost sales in key regions.	Nikhil Rao Janagama
		d) What is my projection of sales/profits, etc., by category/sector?	Historical trends and geographic insights reveal SciFi/Fantasy as a consistently high-performing genre across regions, with Seattle driving	Nikhil Rao Janagama

MGS 628 Data Visualizations for Business Insights

Final Report

			significant sales growth. By focusing on key regions and scaling investments in high-demand genres, while limiting exposure to underperforming categories, projections indicate continued growth in sales and profits, particularly in top-performing cities and sectors.	
Revenue by Publisher	Bar Chart	Displays total revenue generated by each publisher using a bar chart.	Helps assess publisher contributions to overall revenue and guide negotiations with publishers or reallocate focus.	Sai Keerthi Chelluri
Average Revenue per Title by Genre	Treemap	Shows the average revenue generated per book title across different genres using a treemap.	Helps identify which genres contribute the most revenue per title to allocate resources and focus on high-performing genres.	Sai Keerthi Chelluri
Genre Engagement by Checkouts	Scatter Plot	Analyzes the engagement level by checkouts for different publishers and genres using a scatter plot.	Guides decisions on publisher-specific campaigns and inventory planning for popular genres with higher engagement levels.	Sai Keerthi Chelluri
Genre Engagements by Borrowings	Dashboard 1	Combines insights on average revenue per title, publisher revenue, and genre engagement.	Identifies high-revenue genres, evaluates publisher contributions, and informs inventory and campaign strategies.	Sai Keerthi Chelluri

MGS 628 Data Visualizations for Business Insights

Final Report

Revenue Trends Over Time	Line Chart	Analyzes revenue trends monthly to highlight peaks and drops using a line chart.	Provides insight into revenue seasonality and supports forecasting and financial planning.	Sai Keerthi Chelluri
Genre Revenue Contribution	Scatter Plot	Compares marketing spend with profit margins for different genres using a scatter plot.	Helps evaluate the effectiveness of marketing investments and adjust spending strategies for better returns.	Sai Keerthi Chelluri
Geographical Revenue Distribution	Map Chart	Maps revenue contribution across different regions using a geographic map.	Allows the Finance Department to understand geographical revenue distribution and prioritize regions for targeted strategies.	Sai Keerthi Chelluri
Geographical Distribution , Trends and Genre Contribution	Dashboard 2	Combines geographical revenue distribution, revenue trends over time, and genre revenue contributions.	Tracks revenue seasonality, identifies high-performing regions, and evaluates the contribution of different genres.	Sai Keerthi Chelluri
Marketing Spend vs. Profitability by Genre	Scatter Plot	Compares marketing spend with profit margins for different genres using a scatter plot.	Helps evaluate the effectiveness of marketing investments and adjust spending strategies for better returns.	Sai Keerthi Chelluri
Impact of Discounts on Sales by Genre	Stacked Bar Chart	Visualizes the effect of discounts on sales performance for each genre using a stacked bar chart.	Helps analyze the financial impact of discount strategies and optimize discount levels to maximize sales without compromising	Sai Keerthi Chelluri

MGS 628 Data Visualizations for Business Insights

Final Report

			profitability.	
Quarterly Percentage Change in Sales by Publisher and Country	Table	Shows the percentage change in sales for publishers across different quarters using a table.	Enables tracking of publisher performance over time and supports decision-making on future collaborations or investments.	Sai Keerthi Chelluri
Evaluating Profitability, Sales Growth, and Discount Impacts by Genre and Publisher	Dashboard 3	Analyzes marketing spend, profitability, sales percentage changes, and the impact of discounts on sales.	Optimizes marketing budgets, evaluates discount strategies, and tracks publisher performance for improved profitability.	Sai Keerthi Chelluri
Analyzing Revenue and Engagement: Publisher and Genre Performance	Storyboard	Combines dashboards and insights:	a) Identifies high-performing genres and publishers contributing to revenue.	Sai Keerthi Chelluri
		- Revenue by Genre and Publisher	b) Highlights the impact of marketing spend and discounts on profitability.	Sai Keerthi Chelluri
		- Revenue Trends and Geographical Distribution	c) Tracks revenue trends and geographical performance for financial planning.	Sai Keerthi Chelluri
		- Marketing Spend and Profitability Analysis	d) Provides actionable recommendations for optimizing financial strategies.	Sai Keerthi Chelluri
Top Pub Nof T	Bar Chart	Displays the number of book titles by each publisher.	Helps evaluate publisher contributions to the collection.	Nikhil Raj Yammani

MGS 628 Data Visualizations for Business Insights

Final Report

BP by Checkouts	Scatter Plot	Shows the popularity of books based on the number of checkouts.	Identifies popular books and informs marketing or stocking strategies.	Nikhil Raj Yammani
Genre Breakdown by checkouts	Bar Chart	Highlights checkout distribution by genre, grouped by average ratings.	Helps analyze which genres have the highest engagement levels and customer satisfaction.	Nikhil Raj Yammani
Top Publishers, Genres, and Checkout Trends	Dashboard 1	Combines publisher performance and book popularity data for actionable insights.	Guides resource allocation and strategies for publisher partnerships and stocking decisions.	Nikhil Raj Yammani
Marketing Spend by Publisher	Bar Chart	Shows the marketing spend by each publisher.	Evaluates the efficiency of marketing investments by publisher.	Nikhil Raj Yammani
Geographical Distribution of Publishers	Map Chart	Maps publisher distribution and their regional contributions.	Helps prioritize regions for campaigns or resource allocations.	Nikhil Raj Yammani
Publisher Popularity by Checkouts	Line Chart	Displays checkout trends over time for publishers.	Tracks performance and identifies declining or improving publisher popularity trends.	Nikhil Raj Yammani
Global Reach and Marketing and Checkout Trends	Dashboard 2	Combines regional publisher distribution, marketing spend, and popularity trends for comprehensive analysis.	Guides region-specific marketing and spending strategies while monitoring publisher performance over time.	Nikhil Raj Yammani
Top Performing Genres by Book	Bar Chart	Displays the top genres based on	Guides decisions on genre-specific	Nikhil Raj Yammani

MGS 628 Data Visualizations for Business Insights

Final Report

Count		the number of books.	investments or promotions.	
Audience Engagement: Average Rating vs. Number of Checkouts by Genre	Scatter Plot	Highlights the relationship between average ratings and checkouts for genres.	Identifies genres with high engagement to focus marketing and stocking efforts.	Nikhil Raj Yammani
Author Performance: Average Rating vs. Number of Books	Bar Chart	Compares authors based on their ratings and number of published books.	Recognizes top authors for collaborations or promotions.	Nikhil Raj Yammani
Analyzing Genre Performance and Author Engagement	Dashboard 3	Combines top genre and author insights with audience engagement for detailed analysis.	Provides actionable strategies for genre-specific promotions and author partnerships.	Nikhil Raj Yammani
"Publisher and Genre Performance Insights"	Storyboard	Combines dashboards and insights:	a) Evaluates publisher contributions and book popularity to guide stocking decisions and prioritize publisher collaborations.	Nikhil Raj Yammani
		- Publisher and Checkout Dashboard	b) Analyzes genre engagement by checkouts and ratings to identify top-performing genres and focus marketing efforts.	Nikhil Raj Yammani
		- Global Publisher Dashboard	c) Tracks regional and temporal publisher performance trends to optimize marketing spend and align with geographical	Nikhil Raj Yammani

MGS 628 Data Visualizations for Business Insights Final Report

			strategies.	
		- Genre and Author Performance Dashboard	d) Provides insights into author performance and audience engagement to identify key authors for collaborations or promotions.	Nikhil Raj Yammani
Top-Selling Books by Genre	Visualization Sheet	Shows total sales categorized by book genre and title.	Identify which genres and books are the best performers to focus marketing efforts or inventory.	Subba Manisha Sure
Monthly Sales Trend & Target	Visualization Sheet	Compares actual monthly sales with sales targets.	Adjust sales strategies or targets based on performance trends.	Subba Manisha Sure
Performance of Books by Title	Visualization Sheet	Highlights the performance of books based on total sales.	Focus marketing on high-potential titles to boost sales.	Subba Manisha Sure
Most Borrowed Books by Checkouts	Visualization Sheet	Illustrates the most borrowed books using checkouts data.	Decide which books to stock more frequently or promote based on popularity in borrowing trends.	Subba Manisha Sure
Sales and Performance Overview	Dashboard 1	Summarizes overall sales, revenue trends, and book performance by genre and title.	Helps in identifying top-performing genres and titles to focus promotional efforts and manage inventory.	Subba Manisha Sure
Total Sells by Author and Book	Visualization Sheet	Provides sales data broken down by author and book title.	Decide which authors or books to prioritize for promotions or author signing events.	Subba Manisha Sure

MGS 628 Data Visualizations for Business Insights

Final Report

Impact of Discounts on Sales Performance	Visualization Sheet	Shows how discounts impact sales performance across genres and customer segments.	Optimize discount strategies to maximize revenue without over-discounting.	Subba Manisha Sure
Inventory Stock Levels by Genre	Visualization Sheet	Highlights the stock levels for each genre, indicating low stock alerts.	Determine which genres require restocking to meet customer demand and avoid lost sales.	Subba Manisha Sure
Inventory and Discount Management	Dashboard 2	Provides insights into inventory levels, including stock shortages or excess for each genre.	Enables better inventory management by identifying restocking needs and optimizing stock distribution.	Subba Manisha Sure
Monthly Checkout Trends	Visualization Sheet	Shows monthly trends in book checkouts segmented by genre.	Plan promotional events or marketing campaigns during high and low demand periods.	Subba Manisha Sure
Revenue Contribution by Genre	Visualization Sheet	Provides insights into how much each genre contributes to overall revenue.	Focus marketing and budgeting efforts on the most profitable genres.	Subba Manisha Sure
Relationship Between Demand and Stock Levels by Genre	Visualization Sheet	Analyzes demand patterns for genres relative to their stock levels.	Optimize inventory management to balance demand and stock effectively.	Subba Manisha Sure
	Dashboard 3	Tracks customer checkouts and compares them to sales targets, segmented by genres and time periods	Supports planning of seasonal promotions, pricing adjustments, and improving customer engagement.	Subba Manisha Sure
Bookstore Performance	StoryBoard	Combines dashboards	Allows the stakeholder to:	Subba Manisha Sure

MGS 628 Data Visualizations for Business Insights Final Report

Story		showing sales trends, revenue by genre, inventory levels, and customer engagement to narrate the overall performance and areas needing attention.		
			a) Identify underperforming genres, titles, or products.	Subba Manisha Sure
			b) Optimize discount strategies and inventory.	Subba Manisha Sure
			c) Forecast sales/profits.	Subba Manisha Sure
			d) Decide on marketing campaigns or promotional activities to boost sales.	Subba Manisha Sure