Basic Data Exploration

1. How many transactions are there in the dataset?

2. What is the total number of unique customers?

3. What are the counts of each gender in the dataset?

4. What is the distribution of customer ages?

5. What are the unique product categories in the dataset?

Sales Insights

6. What is the total revenue (sum of Total Amount)?

7. What is the average, minimum, and maximum Total Amount for a transaction?

8. Which product category generates the highest total revenue?

9. What is the total quantity sold for each product category?

10. Which product category has the highest average price per unit?

Customer Analysis

11. What is the average age of customers in the dataset?

12. Which gender contributes the most to total revenue?

13. What is the total revenue and average revenue per customer?

14. Who are the top 10 customers based on total spending?

15. What is the distribution of transactions across different age groups (e.g., 18-25, 26-35)?

Time-Based Analysis

16. What is the trend of total sales over time (e.g., daily, monthly)?

17. Which date had the highest total sales?

18. What is the total revenue for each day of the week?

19. What is the seasonality in sales (e.g., quarterly performance)?

20. How does customer spending vary by time of year (e.g., holidays)?

Advanced Analysis

21. What is the correlation between age and total spending?

22. Is there a significant difference in average spending between genders?

23. What is the average revenue per product category and how does it compare across categories?

24. Identify outliers in Total Amount (e.g., transactions with unusually high or low amounts).

25. What is the conversion rate of high-spending customers (e.g., those spending over a certain threshold)?

Data Visualization Ideas

26. Create a histogram of Age to visualize the age distribution of customers.

27. Plot total revenue by product category using a bar chart.

28. Plot sales trends over time using a line chart.

29. Visualize the relationship between quantity and total amount using a scatter plot.

30. Create a pie chart to show the percentage contribution of each product category to total revenue.

Predictive Insights

31. Can customer demographics (e.g., age, gender) predict spending behavior?

32. Which customers are likely to churn based on spending trends?

33. What is the lifetime value of customers based on past transactions?

34. Can you forecast sales for the next month using the current dataset?

35. What factors are most strongly associated with high sales (e.g., age, product category)?

Segmentation and Clustering

36. Can you cluster customers based on their spending behavior?

37. Segment customers into low, medium, and high spenders.

38. How do spending patterns differ between these customer segments?

39. Which product categories are most popular among different customer clusters?

40. What is the age distribution in each customer segment?

Miscellaneous

41. Are there duplicate transactions in the dataset?

42. How many transactions have a quantity of zero or negative values? Are they valid?

43. What is the average number of products purchased per transaction?

44. Are there any missing or null values in the dataset?

45. How does the Price per Unit vary across different product categories?

Combining Metrics

46. What is the average quantity sold for each product category, segmented by gender?

47. Calculate the revenue per unit for each product category.

48. Which age group generates the highest average revenue per transaction?

49. What is the average total amount for repeat customers vs. new customers?

50. Calculate the sales per customer per product category.