

# Matrix Manufacturing & Retail

## Performance Analysis Report

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# Project Plan:

## Requirements Gathering:

- Identify key stakeholders and their requirements.
- Determine the specific data tables needed for analysis.

## Data Gathering:

- Access the Online SQL IDE and load the sales database
- Use "SELECT" statements to retrieve sales data for frames and mountain bikes.
- Retrieve product details, customer information, and loyalty metrics.
- Export the data in a suitable format for analysis.



### **Insight Development and Recommendations:**

- Analyse the results of the data analysis.
- Identify key findings and insights related to sales performance, product breakdown, and customer loyalty.
- Formulate recommendations based on the identified insights.
- Support the recommendations with evidence and data-driven arguments.

### **Report Preparation:**

- Organize the findings, insights, and recommendations into a structured report.
- Use charts, tables, and visualizations to present the data effectively.
- Ensure the report is clear, concise, and visually appealing.
- Provide a narrative explaining the analysis and its implications.

### **Presentation and Review:**

- Present the report to the manager for feedback and validation.
- Incorporate any necessary revisions or additional analysis.
- Prepare for the manager's meeting with senior executives.
- Address any questions or concerns raised during the review.



## Requirements Gathering

1. Evaluate the sales performance of the bike product category (frames & Mountain bikes).
2. Break down the sales by individual products.
3. Analyse customer loyalty metrics.
4. Identify potential issues and provide recommendations for improvement.

# Data Gathering

How sales on the bike product category are performing (frames and mountain bikes)

```
1 SELECT Name,price*quantity AS Mountain_Revenue
2 FROM Products
3 JOIN Sales ON Products.ProductID=Sales.ProductID
4 WHERE Name LIKE 'Mountain%';
5
```

Name	Mountain_Revenue
Mountain-200 Silver 38	4639.98
Mountain-500 Black 52	5399.9
Mountain-500 Silver 42	2824.95
Mountain-400-W Silver 42	5386.43
Mountain Bike Socks M	85.5

```
1 SELECT Name,price*quantity AS Frame_Revenue
2 FROM Products
3 JOIN Sales ON Products.ProductID=Sales.ProductID
4 WHERE Name LIKE '%Frame%';
5
```

Name	Frame_Revenue
HL Road Frame - Black 52	8589
HL Road Frame - Black 52	1431.5
HL Touring Frame - Yellow 60	10039.1
HL Touring Frame - Yellow 60	4015.64
HL Touring Frame - Yellow 46	10039.1

## A breakdown of sales by product

```
1 SELECT Name,price*quantity AS Sales_revenue
2 FROM Products
3 JOIN Sales ON Products.ProductID=Sales.ProductID
4
5
```

Name	Sales_revenue
Bearing Ball	2.4
Bearing Ball	1.6
Headset Ball Bearings	0
Blade	189.6
HL Crankarm	2552



## Figures on customer loyalty

```
1 SELECT
2 COUNT( firstname) AS Total_Customers
3 FROM Customers
4 JOIN Sales ON Customers.CustomerID=Sales.CustomerID
5
6
```

⋮ Total\_Customers

300

## Summary

```
1 SELECT
2     Customers.FirstName AS Customers_firstName,
3     Customers.lastname AS Customers_lastName,
4     Employees.FirstName AS Employees_Name,
5     Products.price * Sales.quantity AS Sales_revenue,
6     Products.name AS Pro_Name
7 FROM
8     Customers
9     INNER JOIN Sales ON Sales.CustomerID = Customers.CustomerID
10    INNER JOIN Employees ON Employees.employeeid = Sales.salespersonid
11    INNER JOIN Products ON Products.productid = Sales.ProductID;
```

Customers_firstName	Customers_lastName	Employees_Name	Sales_revenue	Pro_Name
Alisha	Yuan	Sheryl	6681.15	Touring-3000 Blue 62
Alisha	Yuan	Dirk	3401.98	Road-350-W Yellow 48
Alison	Yuan	Innes	10916	HL Mountain Frame - Silver 44
Alison	Yuan	Stearns	25047.89	Road-150 Red 44
Alvin	Yang	Abraham	349.93	Long-Sleeve Logo Jersey XL





# **Analysis in R**

## How sales on the bike product category are performing (frames and mountain bikes)

```
# Calculate the total sales revenue for the filtered products
Frame_sales <- sum(frame_data$Sales_revenue)
Mountain_sales <- sum(Mountain_data$Sales_revenue)
```

Frame\_Sales – 220,692.8  
Mountain Sales – 323,736.6

```
[1] 323736.6
> print(Frame_sales)
[1] 220692.8
```

```
> print(Mountain_sales)
[1] 323736.6
>
```

## A breakdown of sales by product

	Product_Name	Total_Sales
1	Mountain-100 Silver 38	47599.86
2	Road-150 Red 48	42939.24
3	Road-150 Red 44	39360.97
4	Mountain-200 Black 38	36719.84
5	HL Mountain Frame - Black 46	32390.40
6	Mountain-100 Black 42	26999.92
7	Road-150 Red 52	25047.89
8	Touring-1000 Blue 50	23840.70
9	Road-350-W Yellow 40	23813.86
10	Mountain-100 Black 38	23624.93
11	Road-250 Red 48	21990.15
12	Mountain-100 Black 48	20249.94
13	HL Mountain Frame - Silver 44	19103.00
14	Touring-1000 Blue 54	19072.56
15	Road-450 Red 52	18953.87
16	HL Road Frame - Black 44	18609.50
17	Road-250 Red 44	17103.45
18	Lock Ring	16596.00
19	HL Touring Frame - Yellow 46	16062.56
20	HL Touring Frame - Yellow 60	14054.74

## Top 5 Selling Products

	Product_Name	Total_Sales
1	Mountain-100 Silver 38	47599.86
2	Road-150 Red 48	42939.24
3	Road-150 Red 44	39360.97
4	Mountain-200 Black 38	36719.84
5	HL Mountain Frame - Black 46	32390.40

```
> print(Total_revenue)
[1] 1058762
>
```

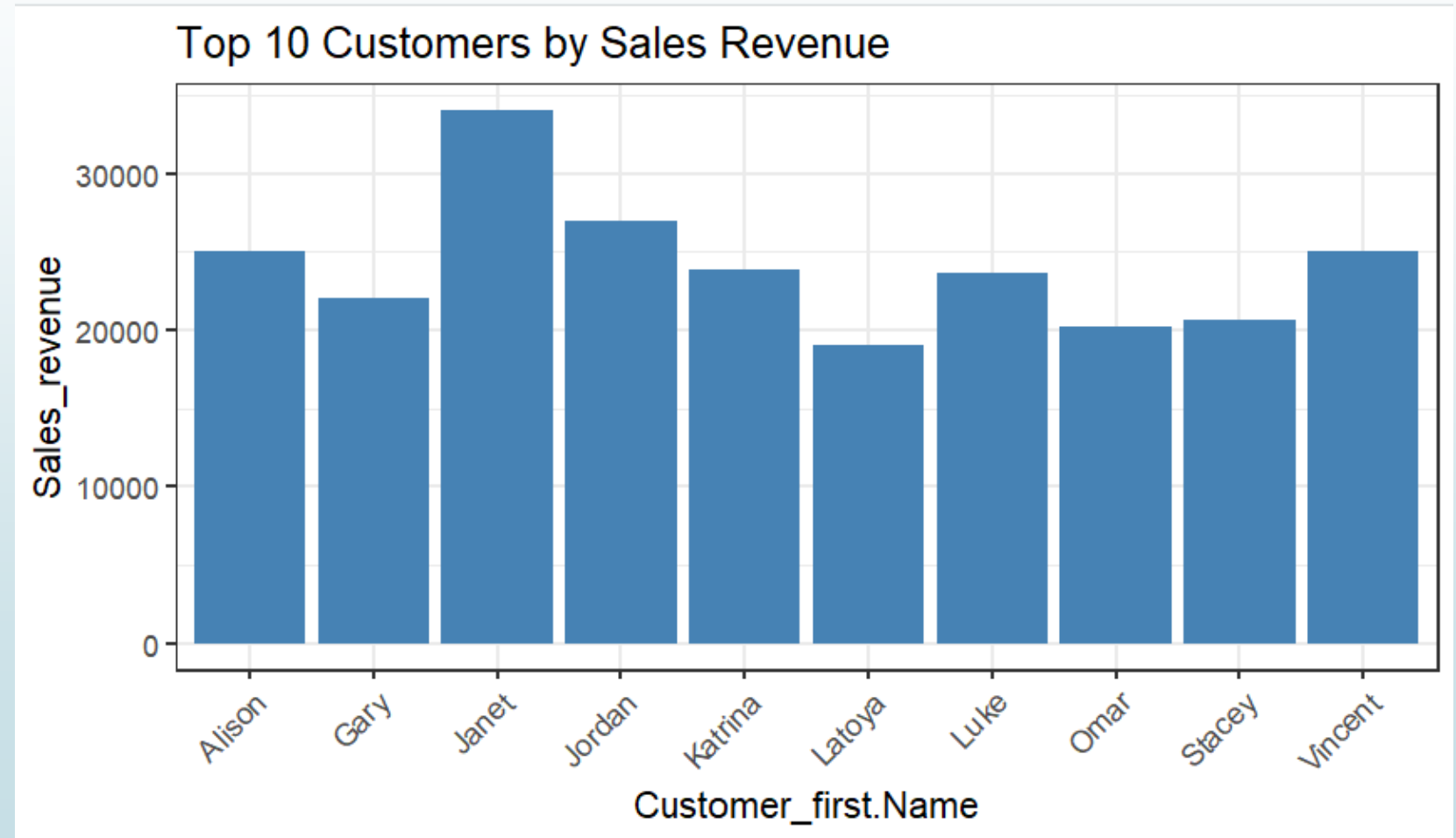
## Customer Loyalty

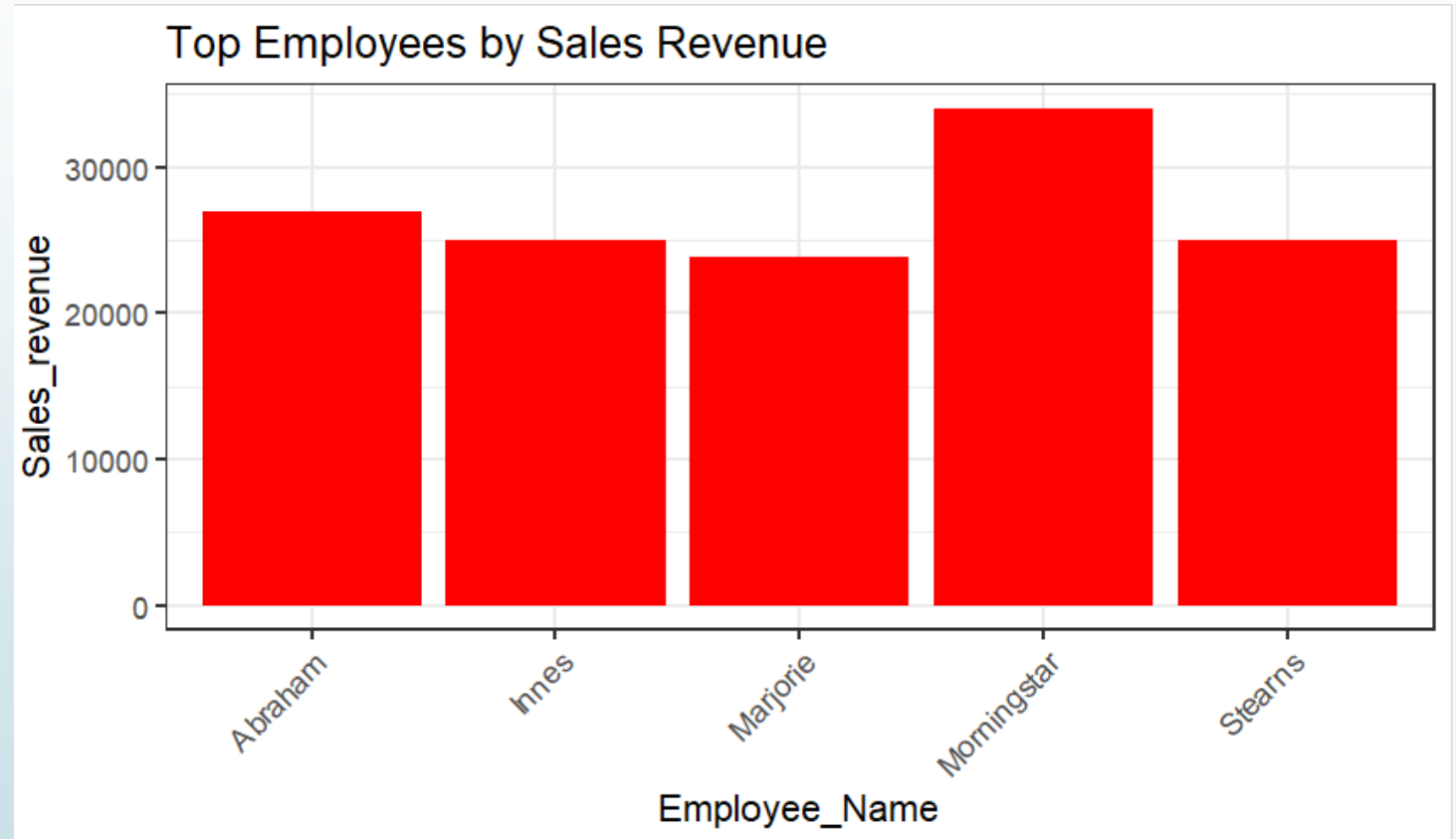
```
> print(paste("Average Sales per Customer:  
[1] "Average Sales per Customer: £ 96251.11  
/
```

## Top 10 Customers based on the Sales data

	Customer_first.Name	Customer_LastName	Employee_Name	Sales_revenue	Product_Name
122	Janet	Young	Morningstar	33999.90	Mountain-100 Silver 38
145	Jordan	Young	Abraham	26999.92	Mountain-100 Black 42
15	Alison	Yuan	Stearns	25047.89	Road-150 Red 44
288	Vincent	Ye	Innes	25047.89	Road-150 Red 48
167	Katrina	Yuan	Marjorie	23840.70	Touring-1000 Blue 50
193	Luke	Yang	Cheryl	23624.93	Mountain-100 Black 38
99	Gary	Yukish	Cheryl	21990.15	Road-250 Red 48
260	Stacey	Ye	Cheryl	20654.91	Mountain-200 Black 38
224	Omar	Ye	Meander	20249.94	Mountain-100 Black 48
183	Latoya	Yuan	Michael	19072.56	Touring-1000 Blue 54

## Customer Loyalty







# Issues and Recommendations

**Inconsistent Sales Performance:** There is a significant variation in sales revenue among employees and customers. Some employees and customers are generating high sales revenue, while others are not performing as well. This indicates a need for better sales strategies and training.

**Recommendation:** Conduct a performance analysis to identify the factors contributing to the success of top-performing employees and customers. Implement training programs to improve sales techniques and provide support to underperforming employees. Offer incentives or rewards to motivate employees to achieve better sales results.