

NullClass Internship Report

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05-06-2025 to 05-07-2025

1 Introduction

This report documents my internship experience as a **Data Analyst Intern** at **NullClass** during the period of **05-06-2025 to 05-07-2025**. The internship provided me with hands-on experience in analyzing business data, generating insights, and preparing visualizations to support strategic decision-making. The two major tasks I completed focused on product performance analysis and customer segmentation using sales and profit data.

2 Background

The internship was aimed at understanding how data can drive business decisions, particularly in **marketing and sales analytics**. With businesses becoming increasingly data-driven, interpreting sales trends and customer profitability has become essential. My responsibilities were aligned with real-world business scenarios to help marketing teams make informed choices based on historical data.

3 Learning Objectives

- Apply data filtering and aggregation techniques to real-world datasets.
- Perform category-based and time-based data segmentation.
- Use logical conditions to classify customer segments.
- Visualize business insights using appropriate charts.
- Enhance skills in data cleaning, transformation, and interpretation.

4 Activities and Tasks

Task 1: Top 5 Products by Sales in 2022 (Mobiles & Tablets)

- **Objective:** Identify the highest-selling products in the *Mobiles & Tablets* category.
- **Steps:**
 - Filtered data for 2022 and for orders where `is_valid = 1`.
 - Included only **Mobiles & Tablets** category.
 - Grouped by `sku_name` and `category`, and aggregated using `SUM(qty_ordered)`.

- Ranked products by descending order of quantity ordered.
- Displayed results in a horizontal bar chart in google looker studio.

- **SQL Code:**

```
use sales ;

-- TASK 1

select
    s.skun_name,s.category ,
    sum(o.qty_ordered) as net_sales
from order_detail o
join sku_detail s on o.sku_id=s.id
where year(o.order_date)=2022 and o.is_valid=1
and s.category="Mobiles & Tablets"
group by s.skun_name,s.category
order by net_sales desc
limit 5;
```

- **Output:**

sku_name	category	net_sales
IDROID_BALRX7-Gold	Mobiles & Tablets	1000
IDROID_BALRX7-Jet black	Mobiles & Tablets	31
Infinix Hot 4-Gold	Mobiles & Tablets	15
samsung_Grand Prime Plus-Black	Mobiles & Tablets	11
samsung_Grand Prime Plus-Silver	Mobiles & Tablets	10

Task 2: Net Profit per Customer Segment

- **Objective:** Categorize customers based on their total net profit contribution.

- **Steps:**

- Calculated net profit per customer: SUM(after_discount - cogs).
- Applied segmentation logic:
 - * **Low:** Net profit < \$100
 - * **Medium:** Net Profit is from \$100 to \$500
 - * **High:** < \$500
- Visualized the distribution with a pie chart in Looker Studio

- **SQL Code:**

```
use sales ;

-- TASK 2

with cust_tab as(
```

```

select
    o.customer_id,
    abs(round(sum(o.after_discount-s.cogs),2)) as PCB,
case
when round(sum(o.after_discount-s.cogs),2)<0 then "LOSS"
when round(sum(o.after_discount-s.cogs),2)<100 then "LOW"
when round(sum(o.after_discount-s.cogs),2)>=100
    and round(sum(o.after_discount-s.cogs),2)<500 then "MEDIUM"
when round(sum(o.after_discount-s.cogs),2)>=500 then "HIGH"
end as "Segment"
from order_detail o join sku_detail s on o.sku_id=s.id
where o.is_valid=1
group by o.customer_id)

select Segment, round(sum(PCB),2) as net_Pofit_Per_Segment
from cust_tab
group by Segment;

```

• **Output:**

Segment	net_Pofit_Per_Segment
HIGH	1597332476.24
LOW	58
LOSS	3551800.06
MEDIUM	1577.6

5 Skills and Competencies Developed

- **Data Analysis:** Filtering, grouping, and aggregating data.
- **SQL:** Used SQL to retrieve data from database and perform required tasks
- **Data Visualization:** Used **Google Looker Studio** to visualize Pie charts and bar charts for clear communication.
- **Business Intelligence:** Understanding business implications from data.
- **Critical Thinking:** Logical application of business rules to real-world data.

6 Feedback and Evidence

- SQL Tasks were reviewed and verified by visualizations.
- Work was well-documented, reproducible, and based on clean and filtered data.
- Coming to Internship feedback, this was very useful to me. It has provided me the hands on experience and developed thinking ability.

7 Challenges and Solutions

Challenge	Solution
Filtering only valid data across large datasets	Used filter <code>is_valid = 1</code> efficiently in WHERE clause or dashboard filters
Grouping data and deriving something again from that grouped data is some what concerning	Used common table expressions to acheive this
Customer segmentation with overlapping edge cases	Applied clean logic to avoid misclassification at \$100 and \$500 thresholds
Google looker cant support to create visual from another existing visual	Exported that existing visual (Tabular Visual) and imported that data to create pie chart visual

8 Outcomes and Impact

- Now, Marketing team can identify top 5 products for year-end campaigns.
- Segmented customer base to tailor strategies for high-value customers.
- Business gained insight into profitability distribution for better targeting.
- Visualizations such as pie charts and bar graphs improves stakeholder understanding, enabling faster and more informed decision-making.
- The report serves as a benchmark to measure changes in customer profitability and product sales performance in future quarters.
- Helps non-technical team members interpret complex sales and profit data through clean and accessible visual reporting.
- Improves collaboration between marketing and analytics teams by providing accurate, ready-to-use summaries and dashboards.

9 Conclusion

This internship enhanced my practical understanding of data analytics and its business impact. It helped strengthen my analytical, technical, and problem-solving skills in handling real datasets. I now feel more confident working with sales and customer data to derive actionable insights and contribute to data-driven decisions.

Prepared by:

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