

Low-Level Design (LLD) Document

Project Title: Power BI Dashboard for Customer Transactions Analysis

Objective: Provide detailed technical specifications, visuals, and logic for the three dashboards.

1. Data Sources

Table Name: Transactions

Source Format: CSV / Excel / Database

Data Columns:

- TransactionID
- EventType (e.g., Black Friday, Christmas Market, Regular)
- Province (e.g., Alberta, Ontario)
- Year
- Weather (e.g., Rainy, Sunny, Snowy)
- ProductCategory (e.g., Clothing, Toys)
- AgeGroup (e.g., 18–24, 25–29)
- Gender (e.g., Male, Female, Other)
- UnitPriceCategory (e.g., 10–27, 28–45)
- PurchaseMode (Online/In-store)
- PromotionApplied (Yes/No)
- GiftWrapped (Yes/No)
- SatisfactionScore (float, 1–5 scale)
- DeliveryTime (in days)
- Returned (Yes/No)
- ShippingMode (Express, Overnight, Standard)
- PaymentMethod (Cash, Credit Card, Online Payment)
- ProductName
- ProductID
- SalesVolume
- SalesAmount (\$)

2. Visuals & Logic

A. Overview Dashboard

Visual	Type	Measure	Filter/Logic
Total Transaction	Card	Count(Transaction_id)	All
Transaction by Event	Donut Chart	Count(Transaction_id) by event	Grouped by Event

Transaction Trend	Line Chart	Count(Transaction_id) by year	Calendar[Year]
Transaction by Weather	Bar Chart	Count(Transaction_id) By Weather	Group by Weather Type
Transaction by Province	Map	Count(Transaction_id) by region	Customers[Province]
Transaction by Product Category	Bar Chart	Count by Product category	Group by category

B. Purchases Dashboard

Visual	Type	Measure	Filter/logic
Customer Satisfaction	Donut/Bar	Avg(Satisfaction)	Group by event
Transaction by Age Group	Stacked Bar	Count of transactions	Group by age range
Transaction by Gender	Stacked Bar	Count of transactions	Group by gender
Purchase Mode Trend	Line Chart	Count by Purchase Mode & Year	PurchaseMode + Calendar[Year]
Transaction by Promotions	Bar Chart	Count of Applied vs Not Applied	Promotions[Applied]
Transaction by Gift Wrapping	Bar Chart	Count by GiftWrap status	Grouped by GiftWrap
Transaction by Unit Price	Horizontal Bar	Count by price buckets	Binned Unit Price (e.g., 10–27)

C. Operations Dashboard

Visual	Type	Measure	Filter/Logic
Avg Delivery Time	Card & Donut	Avg(Shipping[Delivery_Time])	Group by Event

Payment Methods	Bar Chart	Count by Payments[Mode]	Group by Cash, Online, Credit, Debit
Returns Overview	Bar Chart	Count by return status	Returned, Not Returned
Shipping Modes	Bar Chart	Count by Shipping[Mode]	Express, Overnight, Standard
Product Performance Table	Table	Product ID, Name, Sales Volume, Sales (\$)	Top 10 or All

3. Filters and Slicers

- **Global Filters:** Event, Year, Gender, Province, Product Category
- **Slicers:** Toggle Buttons for Event, Gender, Purchase Mode

4. Visual Design Notes

- Consistent purple color palette across dashboards
- Rounded cards and visuals
- Icon usage next to labels for clarity (e.g., Black Friday, Christmas Market)
- Clean layout with white background and soft shadows
- Navigation menu on left pane: Overview, Purchases, Operations

5. Measures and Calculated Columns

Name	Formula/Measure
Total Sales	SUM(Sales(\$))
Total Transactions	COUNT(TransactionID)
Average Delivery Time	AVERAGE(DeliveryTime)
Average Customer Satisfaction	AVERAGE(CustomerSatisfaction)

Sales Volume	SUM(Quantity)
Age Group	Group age using bins (18–24, 25–29...)