

STORY 2 – TECHNICAL IMPLEMENTATION USING POWER BI

1. Power BI Desktop – Data Import & Setup

- Imported dataset containing product details, stock quantity, reorder levels, expiry dates, supplier, and category.
- Verified column headers and assigned correct data types.
- Sorted date fields (Year, Quarter, Month, Day).

2. Power Query – Transformations Applied

- Removed duplicates for clean data.
- Corrected data types for all fields.
- Filtered null values.
- Created custom columns:
 - Days to Expiry = Expiry Date – Today
 - Low Stock Flag = IF Quantity ≤ Reorder Level
- Split product name and size where needed.
- Replaced errors in date fields.
- Merged supplier and category tables with main inventory table.

3. Power Pivot – Data Modeling

- Fact Table: Fact_Inventory
- Dimension Tables: Dim_Category, Dim_Supplier
- Relationships:
 - Fact_Inventory[Category] → Dim_Category[Category]
 - Fact_Inventory[Supplier] → Dim_Supplier[Supplier]
- Calculated Columns:
 - LowStock = IF([Quantity] <= [Reorder Level], "Low Stock", "In Stock")
 - InventoryValue = Quantity * Unit Price

4. Power View – Visualizations Used

- Bar Chart: Category-wise & Supplier-wise stock comparison.

- Donut Chart: % Category stock distribution.
- Pie Chart: Expired vs Valid product analysis.
- Line Chart: Monthly stock trend.
- Card: Total Inventory Value (■ 286K).
- Table: Product details with expiry and reorder info.
- Matrix: Stock status indicator.

5. DAX Measures Created Total

Quantity =

```
SUM(Fact_Inventory[Quantity])
```

Total Inventory Value = SUM(Fact_Inventory[InventoryValue])

Low Stock Count =

```
CALCULATE(
    COUNTROWS(Fact_Inventory),
    Fact_Inventory[Quantity] <= Fact_Inventory[Reorder Level]
)
```

Expired Count = CALCULATE(

```
COUNTROWS(Fact_Inventory), Fact_Inventory[DaysToExpiry]
< 0
)
```

Stock by Month =

```
CALCULATE(
    SUM(Fact_Inventory[Quantity]),
    ALLEXCEPT(Fact_Inventory,
        Fact_Inventory[Month])
)
```

6. Final Output

- One complete dashboard page created.
- Included: Category, Supplier, Expiry, Low Stock, Monthly Trend, KPI Card.
- Insights: Category dominance, low stock items, expiry issues, year-end stock decline, inventory value at ■286K.