Shell Performance Dashboard(Nov 2025)
Quick Summary

Shell Performance Dashboard — November 2025 is an end-to-end retail analytics project built on a synthetic but business-realistic dataset of **100,000** Shell pump transactions across **100 stations** in **10 cities**. The project covers data generation, cleaning, transformation and interactive dashboarding in Power BI (Overview and Operational Analysis pages). Page 1 (Overview) surfaces enterprise KPIs — Total Sales (₹36.81M), Total Volume (266.03K L), Total Transactions (10K), Avg Bill Value (~₹3.61K), Total Discount (₹703.08K) and Total Tax (₹5.61M) — plus trend & top-station analysis and vehicle / fuel mix. Page 2 (Operational) focuses on station/pump/attendant operations with cards and charts that reveal pump volumes, shift performance and top attendants (Top Attendant by Sales ≈ ₹17.89K; example top attendants and totals shown in the Attendant table). All visuals, layout and KPI values are shown in the exported report pages.

Steps I followed in this Project:

Shell Performance Dashboard (Nov 2025)

Project type: End-to-end data analytics & dashboarding (synthetic dataset, Power BI)
Tools used: Python (data generation & cleaning), Jupyter Notebook, Power BI Desktop, Excel
Dataset size: 100,000 rows — Synthetic Shell pump transactions (Nov 1–30, 2025)
Project goal: Build an executive & operations dashboard for Shell India retail analytics (sales, volume, pump/attendant operations, loyalty & fleet).

Files included in this repository
- `data/shell_nov2025_1lakh_cleaned.xlsx` — Cleaned transaction dataset (100k rows).
- `notebooks/snitch_data_cleaning.ipynb` — (Optional) original data cleaning notebook used for the Snitch dataset (kept for reference).
- `powerbi/Shell_Performance_Dashboard.pbix` — (optional) Power BI file (if attached).
- `docs/screenshots/` — Dashboard screenshots exported (Overview & Operational pages).
- `README.md` — This file.

NOTE: The dataset used in this demo is synthetic for portfolio purposes. The dashboard screenshots and exported pages are included for reference. See references below. :contentReference[oaicite:2]{index=2}

Project Summary

This project demonstrates a retail analytics workflow focused on Shell petrol pumps across 10 Indian cities for November 2025. The primary focus areas:

1. **Executive overview (Page 1)** — High level KPIs, daily sales trend, fuel-type & vehicle-type breakdown, Top-10 station list, loyalty metrics. (Screenshot: Overview page, shows KPIs such as Total Sales = ₹36.81M, Total Volume = 266.03K L, Total Transactions = 10K.) :contentReference[oaicite:3]{index=3}

2. **Operational analysis (Page 2)** — Pump-level volume trends, attendant performance (top attendants, transactions, sales), shift performance (Morning/Afternoon/Night) and attendant-level tables. (Screenshot: Operational page, shows Total Attendants = 6K, Top Attendant by Sales ≈ ₹17.89K, example top attendants & totals.)

Data (fields & contents)

The dataset contains the following columns (all cleaned, no blanks, no duplicates):

- TransactionID
- TransactionDateTime (Nov 2025)
- StationID, StationName, City, State
- PumpNumber, Shift
- AttendantID, AttendantName
- TerminalID
- FuelType (Petrol / Diesel / Premium)
- UnitPrice(INR), Volume(Liters)
- GrossAmount(INR), DiscountRate, DiscountAmount(INR), TaxAmount(INR), NetAmount(INR)
- PaymentMethod, TransactionChannel, Segment (Retail/Fleet/Corporate)
- VehicleType, OdometerKM
- LoyaltyMember, LoyaltyPointsEarned, FleetCompany, PromoCode

(These columns map 1:1 to the visuals and measures used in the report; you can find them in the Excel file inside `data/`.)

How the project was executed — step-by-step

This section documents the exact steps performed so someone can reproduce the work.

1. Data generation (synthetic)
- Created a synthetic transaction dataset (100k rows) to replicate November 1–30, 2025, covering 100 stations across 10 cities.
- Each transaction had realistic attributes (fuel type, price perturbation, liters, discount rules, taxes, loyalty flags, segments).
- Attendant names were localized to India (Faker `en_IN`) so the dataset matches Indian context.
- Output file: `shell_nov2025_1lakh_cleaned.xlsx`.

2. Data validation & finalization
- Ensured uniqueness of `TransactionID` and `no nulls` across all columns.
- Pre-calculated monetary fields (Gross, DiscountAmount, Tax, Net) so Power BI requires minimal calculations and is performant.
- Exported a CSV/XLSX for Power BI consumption.

3. Load into Power BI
- Power BI Desktop → **Get Data → Excel** → selected `shell_nov2025_1lakh_cleaned.xlsx`.
- **Transform Data** in Power Query:
  - Set types (Date/Time, Decimal, Whole Number, Text).
  - Created a `DateOnly` column (DATEVALUE(TransactionDateTime)) for date slicers and trend axis.
  - Ensured no extra rounding errors.

4. Model & DAX measures
- Created measures used across pages (examples below). These measures power the KPI cards and visuals.

Core KPIs
```DAX
Total Sales = SUM('shell_nov2025'[NetAmount(INR)])
Total Volume (L) = SUM('shell_nov2025'[Volume(Liters)])
Total Transactions = DISTINCTCOUNT('shell_nov2025'[TransactionID])
Average Bill Value = DIVIDE([Total Sales], [Total Transactions], 0)
Total Discount = SUM('shell_nov2025'[DiscountAmount(INR)])
Total Tax = SUM('shell_nov2025'[TaxAmount(INR)])
```

Attendant / Operational measures

```
Total Attendants = DISTINCTCOUNT('shell_nov2025'[AttendantID])

Top Attendant Sales =
MAXX(
  TOPN(1,
SUMMARIZE('shell_nov2025','shell_nov2025'[AttendantName],"Sales",SUM('shell_nov2025'[Ne
tAmount(INR)])), [Sales], DESC),
  [Sales]
)

Fleet Transactions = CALCULATE([Total Transactions], 'shell_nov2025'[Segment] = "Fleet")
Loyalty Transactions = CALCULATE([Total Transactions], 'shell_nov2025'[LoyaltyMember] =
"Yes")
```

Visualisation & UI

Page 1 (Overview) contains:

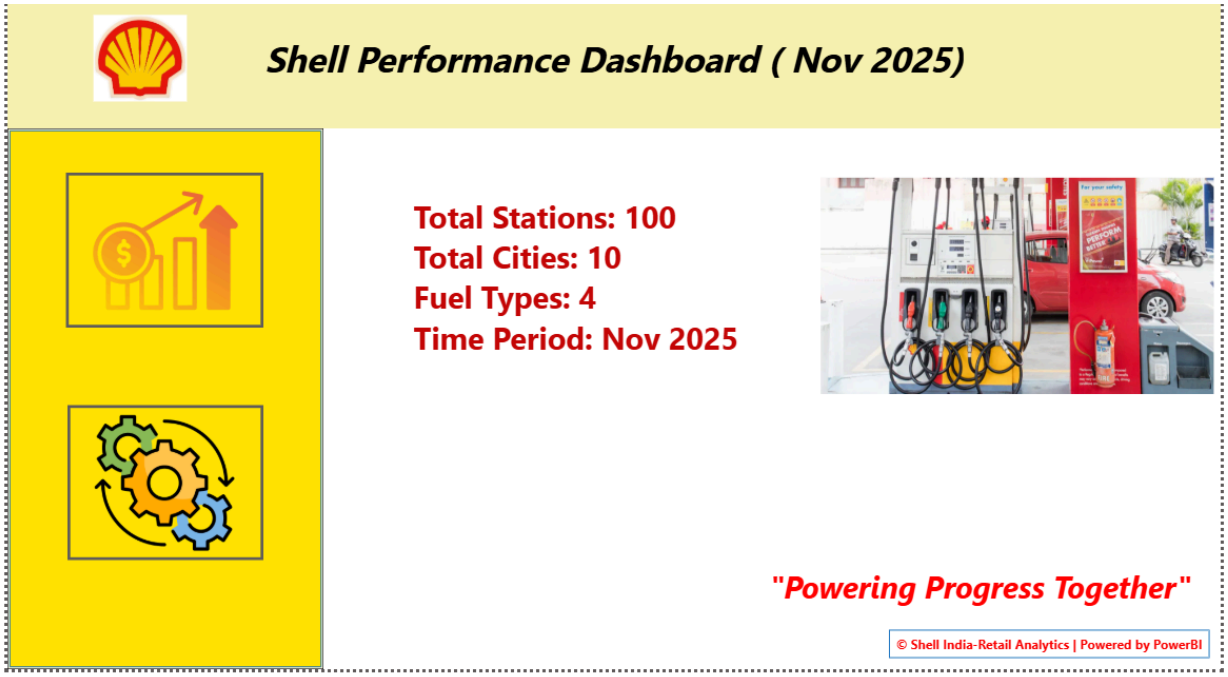
- Top KPI cards (Total Sales, Volume, Transactions, Avg Bill Value, Total Discount, Total Tax). (See screenshot: KPI row — values such as Total Sales = 36.81M are visible).
  shell_output
- Line chart for day-by-day sales trend (with a 7-day MA line).
- Fuel type performance (bar chart) and vehicle-type donut (distribution).
- Top-10 stations chart (sparkline/area), showing station names and sales (values shown in screenshot).
  shell_output
- Loyalty cards showing Total Loyalty Points (363K) and Loyalty Transactions (5K).

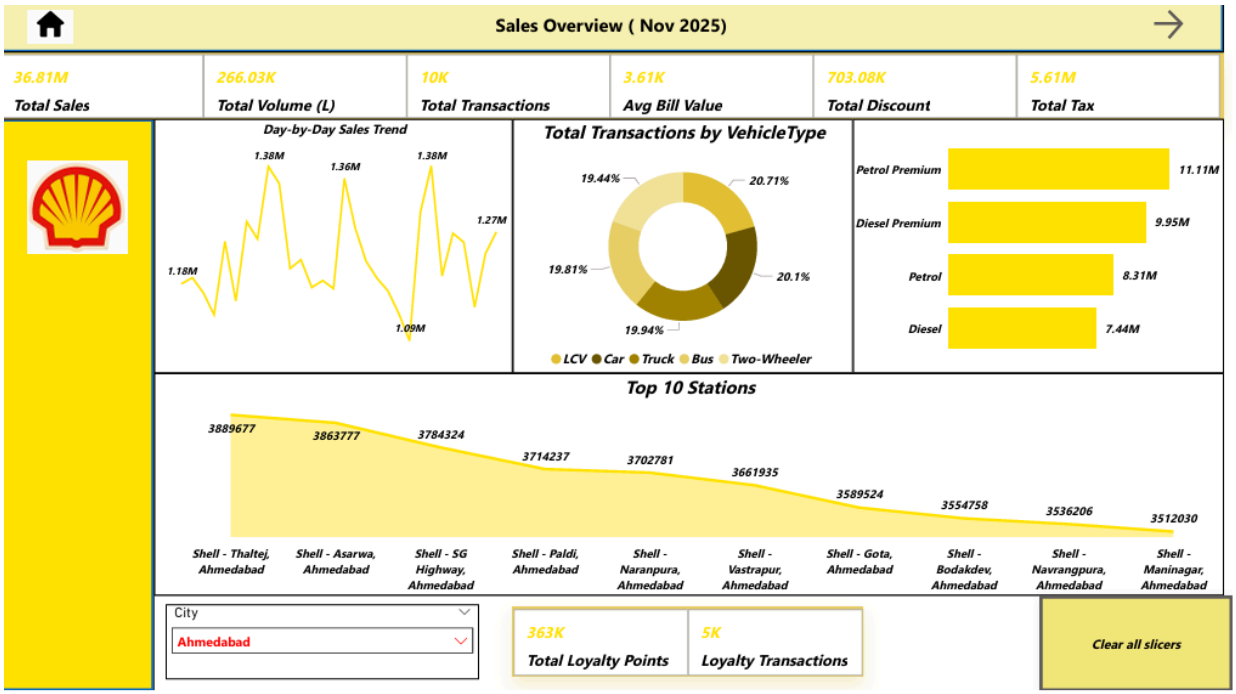
Page 2 (Operational) contains:

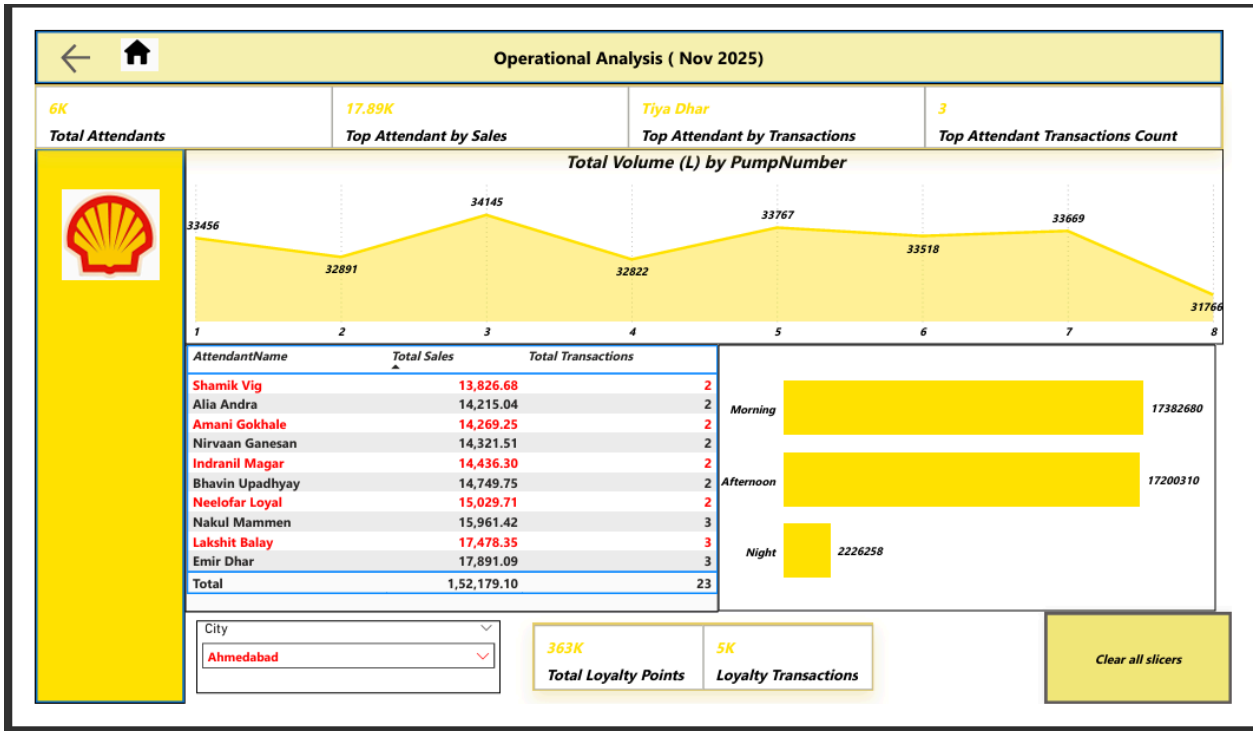
  - Attendant KPI cards (Total Attendants, Top Attendant by Sales ≈ 17.89K, Top Attendant by Transactions, Top Transactions Count). Example attendants & totals visible in Attendant table (Emir Dhar, Lakshit Balay etc).
    shell_output
  - Pump-level volume chart (PumpNumber vs Volume).
  - Attendant table (AttendantName, Total Sales, Total Transactions), with a Top-N filter applied. The screenshot shows an example Top-10 list and totals.
    shell_output
  - Shift performance bars (Morning/Afternoon/Night) visualized for quick operations insight.
    shell_output

The provided screenshots and the exported PDF pages (Overview & Operational) are included in `docs/screenshots/` and match the values cited above.

Screenshots




Sales Overview (Nov 2025)
36.81M
Total Sales
266.03K
Total Volume (L)
10K
Total Transactions
3.61K
Avg Bill Value
703.08K
Total Discount
5.61M
Total Tax
Day-by-Day Sales Trend
1.38M
1.36M
1.38M
1.27M
1.18M
1.09M
Total Transactions by VehicleType
19.44%
20.71%
19.81%
20.1%
19.94%
LCV Car Truck Bus Two-Wheeler
Petrol Premium
11.11M
Diesel Premium
9.95M
Petrol
8.31M
Diesel
7.44M
Top 10 Stations
3889677
3863777
3784324
3714237
3702781
3661935
3589524
3554758
3536206
3512030
Shell - Thaltej, Ahmedabad
Shell - Asarwa, Ahmedabad
Shell - SG Highway, Ahmedabad
Shell - Paldi, Ahmedabad
Shell - Naranpura, Ahmedabad
Shell - Vastrapur, Ahmedabad
Shell - Gota, Ahmedabad
Shell - Bodakdev, Ahmedabad
Shell - Navrangpura, Ahmedabad
Shell - Maninagar, Ahmedabad
City
Ahmedabad
363K
Total Loyalty Points
5K
Loyalty Transactions
Clear all slicers


Operational Analysis (Nov 2025)
6K
Total Attendants
17.89K
Top Attendant by Sales
Tiya Dhar
Top Attendant by Transactions
3
Top Attendant Transactions Count
Total Volume (L) by PumpNumber
33456
32891
34145
32822
33767
33518
33669
31766
1
2
3
4
5
6
7
8
AttendantName
Total Sales
Total Transactions
Shamik Vig 13,826.68 2
Alia Andra 14,215.04 2
Amani Gokhale 14,269.25 2
Nirvaan Ganesan 14,321.51 2
Indranil Magar 14,436.30 2
Bhavin Upadhyay 14,749.75 2
Neelofar Loyal 15,029.71 2
Nakul Mammen 15,961.42 3
Lakshit Balay 17,478.35 3
Emir Dhar 17,891.09 3
Total 1,52,179.10 23
Morning
17382680
Afternoon
17200310
Night
2226258
City
Ahmedabad
363K
Total Loyalty Points
5K
Loyalty Transactions
Clear all slicers