

COFFEE SALES REPORT

DATA CLEANING & TRANSFORMATION:

- We extracted and loaded data into excel using a power query where we will be looking at the data, observing for inconsistencies and extracting new features if needed.
- **Product Detail** column has mentioned size of coffee order (Lg-Large, Rg-Regular and Sm-Small, Not Defined if not mentioned), we need to make a new feature indicating this (called **Size**) and delete this detail from **Product Detail** column.
- Now, to delete this additional information from **Product Detail**, we would use *Transform* feature, where we would select this column and *Replace Values* (i.e., Rg, Lg and Sm with blank). This removes redundant information which has already been extracted.

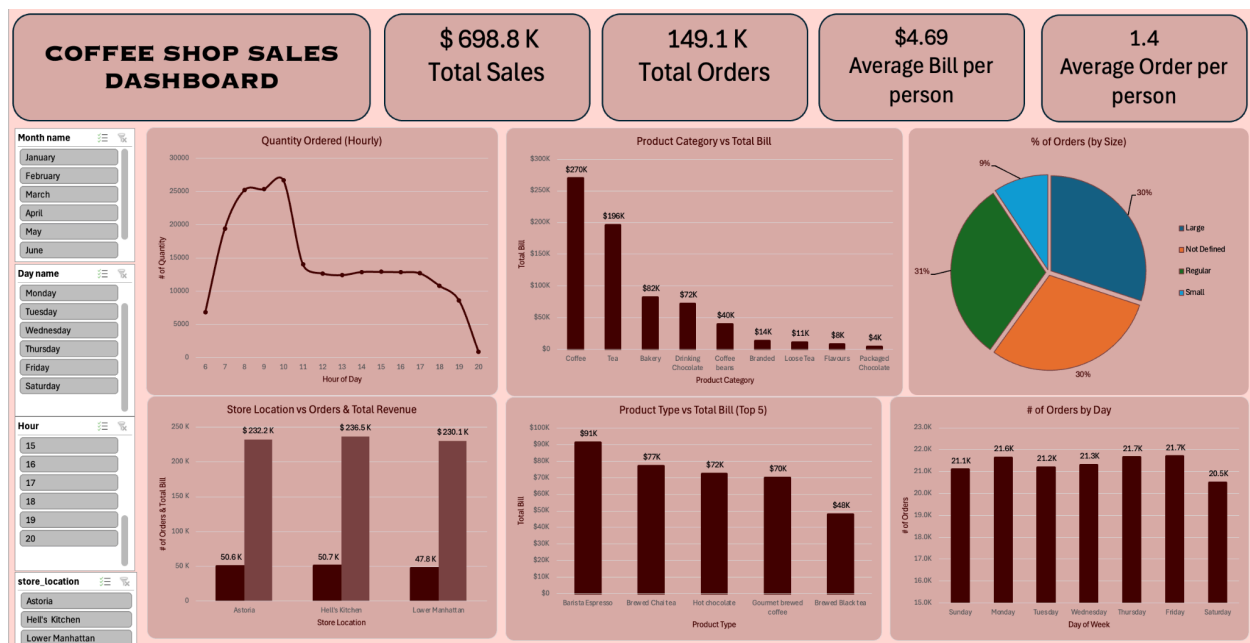
Also, use *Trim* in *Format* option from *Transform* (*Transform* > *Format* > *Trim*) to remove the extra spaces from **Product Detail** column.

- We add another column called **Total Bill**, i.e, product of *transaction_qty* times *unit_price*. We build this using *Add Column* > *Custom Column* and do the needful. Datatype for it is *Currency (in \$)*.
- Now, in *transaction_time* column has date information in it, which is redundant as we already have that information in another column, so, to extract only the time part from it, we select the column, then *Transform* > *Extract* > *Text After Delimiter* > *Put Space as delimiter*. This gives us our required information.
- Using *Add Column* and *Extract* feature, make new columns called **Month Name**, **Day Name** and **Hour** carrying these informations.

DATA ANALYSIS:

- Use *Pivot Tables*, to make tables for following:
 1. **Hour of Day vs Transaction Quantity** (Sum)
 2. **Day of Week vs Total Bill** (Sum),
 3. **Product Category vs Total Bill** (Sum)
 4. **Month vs Total Bill** (Sum)
 5. **Product Detail vs Total Bill** (Sum)
 6. **Product Type vs Total Bill** (Sum)
 7. **Store Location vs Total Bill & Total Orders** (Distinct count of *transaction_id*)
 8. **Size vs # of Orders** (Distinct *transaction IDs*)
 9. **Day of Week vs # of Orders**

- Now, we need to make different visualizations for above pivot tables, we will also make combo charts to make sure that the number of visualizations is optimum in the final dashboard.
- Format all charts carefully with proper color scheme and mark labels to indicate important information.
- Add Slicers for **Month**, **Day**, **Hour of Day** and **Store Location**.
- Also, add KPIs to indicate: **Total Sales**, **Total Orders**, **Average Bill per person** and **Average Order per person** in the final dashboard.
- Below is the Snapshot of our Final Dashboard:



- Let us perform data analysis and generate insights from the dashboard.

INSIGHTS

Overall

- Overall sales have shown a positive trend with sales increasing over months from \$81.7 K to \$166.5 K (double), which means that the coffee shop has been doing great over months.
- Total Revenue and number of orders remains same (or uniform) over the days of week.

- Coffee sales increase from 6 AM to 10 AM (peak) and gradually decrease after that and become uniform between 12 PM to 5 PM and then decrease further.
- Total Revenue and Total orders are the same across all store locations overall.
- Coffee, Tea and Bakery are the most revenue generating (and popular) product categories overall.
- Barista Espresso, Brewed Chai tea and Hot Chocolate are the most popular product types (sub category of product category).
- Large and Regular is the most popular size of coffee amongst customers and small size is least popular.

Deeper Insights

- At 7th hour or 7 AM, Lower Manhattan has the highest revenue and highest orders.
- Astoria does not open at 6 AM and also closes early after 7 PM.
- Both revenue and orders decrease significantly for Lower Manhattan at 7 PM. Are there any factors involved? It is recommended to let the business owner know about this.
- Astoria peaks at around 10 AM, drops after it and remains roughly the same after 11 AM for the entire day.
- Hell's Kitchen peaks twice (8 AM and 10 AM) but drops significantly after 10 AM but remains uniform after 12 PM.
- Lower Manhattan peaks twice (7 AM and 10 AM) but drops after 10 AM, remains uniform after 11 AM eventually decreasing after 4 PM.
- Astoria is a consistent performer (without serious dips with good quantity sold), Hell's Kitchen is second and Lower Manhattan is third.

Recommendations

Based on the provided insights, here are some recommendations to further enhance sales and customer experience:

- **Expand Morning Rush Capacity:** Since sales peak from 6 AM to 10 AM, consider adding more baristas, self-service kiosks, or express counters during these hours to reduce wait times and handle the rush efficiently.
- **Promote Afternoon Specials:** Sales remain uniform between 12 PM and 5 PM, suggesting an opportunity to boost this period with promotions like "Afternoon Happy Hour" discounts or combo deals on coffee, tea, and bakery items.
- **Enhance Product Variety:** Since Barista Espresso, Brewed Chai Tea, and Hot Chocolate are popular, consider introducing seasonal or limited-time variations of these drinks to maintain interest and attract repeat customers.

- **Focus on Popular Sizes:** Promote large and regular sizes with slight discounts or bundled offers, as they are more popular. Consider redesigning the small size or repositioning it as a budget-friendly option to increase its appeal.
- **Standardize Best Practices Across Locations:** Since revenue and orders are consistent across all locations, ensure that successful practices (menu design, promotions) are standardized and shared across stores to maintain consistency in customer experience.
- **Test and Introduce New Bakery Items:** Since bakery items are among the top revenue generators, experimenting with new offerings like healthier options or seasonal treats can attract more customers and increase overall basket size.
- **Optimize Hours of Operation for Astoria:** Astoria doesn't open at 6 AM and closes early after 7 PM, missing key business hours. Extending operating hours could capture early morning and late evening customers, potentially boosting sales.
- **Address the Evening Decline in Lower Manhattan:** Lower Manhattan's revenue and orders drop significantly at 7 PM. Analyze factors such as staff availability, customer feedback, safety concerns, or nearby competition affecting evening traffic, and communicate findings to the business owner.
- **Capitalize on Astoria's Consistency:** Astoria's steady performance without significant dips positions it as a reliable location. Highlight this stability in marketing efforts to attract customers seeking a dependable spot throughout the day.
- **Introduce Mid-Morning Snacks:** Given the drop after 10 AM, introduce mid-morning snacks or coffee refills to keep the momentum going.
- **Enhance Afternoon Engagement for All Locations:** Both Hell's Kitchen and Lower Manhattan experience steady sales after their respective morning peaks. Engage customers with loyalty rewards, exclusive afternoon deals, or sampling events to boost afternoon traffic.