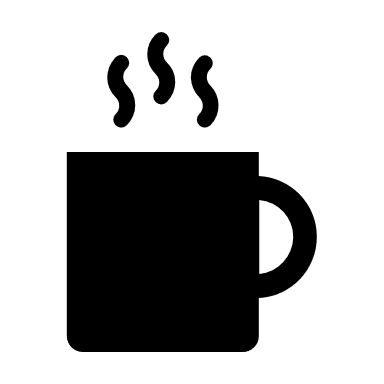
**Coffee Shop Sales **

This analysis focuses on the sales data of Maven Roasters, a fictitious coffee shop operating across three locations in New York City. The dataset consists of transaction records capturing critical details such as the date, time, store location, and product-specific information, including product category, type, and sales figures. This analysis aims to provide insights into Maven Roasters' sales trends over time, customer preferences across different products, and the busiest days for the business.

**Analysis Report**

  
The sales data was analysed monthly, with key metrics including the total sales (sum of transaction bills) for each month. The data shows a clear upward trend from January to June, with June having the highest sales. This suggests that seasonality plays a significant role in sales volume, with the warmer months (April, May, June) driving higher foot traffic and demand for both hot and cold beverages. January and February recorded lower sales, possibly due to the post-holiday slowdown.



The busiest days were identified based on the total number of transactions and total sales for each day of the week. Fridays and Mondays proved to be the busiest days, both in terms of the number of transactions and total revenue. This trend could be attributed to Friday being a popular day for socializing and winding down the workweek, while Monday sees a rush of customers stopping by for their caffeine fix as the week begins. Conversely, Saturdays and Sundays recorded the least activity, indicating that weekends are slightly quieter than weekdays, possibly because people tend to relax at home.

The dataset also provided insights into the best and worst-selling products. Brewed Chai tea was the most frequently sold product, while Barista Espresso generated the highest revenue, indicating its higher price point. Additionally, other top-selling products included Gourmet brewed coffee and Hot Chocolate, both of which contributed significantly to the business’s revenue. These insights help Maven Roasters understand the product mix that resonates with their customers and can assist in inventory management and marketing strategies.

This analysis offers a comprehensive view of Maven Roasters' sales performance, helping the business make data-driven decisions on staffing, inventory, and promotional activities, particularly around peak times, and best-selling products.

**Recommended Analysis Solutions**

**Q.1: How have Maven Roasters sales trended over time?**

**Monthly Sales Trends:**

1. **January**:
   * Total Sales: **$12,742.52**
   * January shows a moderate level of sales, likely because people may be adjusting back to regular schedules after the holiday season.
2. **February**:
   * Total Sales: **$11,375.05**
   * A slight dip compared to January, which could be due to it being a shorter month and fewer shopping or café visits happening during this time.
3. **March**:
   * Total Sales: **$12,684.49**
   * Sales bounce back to near January levels, signaling a return to steady demand, possibly influenced by seasonal factors such as spring or more outdoor activities.
4. **April**:
   * Total Sales: **$20,038.74**
   * This is a significant jump in sales, indicating either an external factor like an event, a marketing push, or the effect of warmer weather encouraging more outdoor coffee purchases.
5. **May**:
   * Total Sales: **$19,304.81**
   * Sales remain strong, though slightly lower than in April. This shows consistent demand, possibly related to continuing good weather or extended consumer activity in the spring months.
6. **June**:
   * Total Sales: **$22,184.70**
   * June sees the highest total sales in the period, reflecting a peak in consumer activity. This could be attributed to summer, where people are more likely to visit cafés for both hot and cold beverages.

**Sales Trend Analysis:**

* **Steady Growth**: After the relatively lower sales in the early months (January to March), there is a notable increase in sales in **April, May, and June**. The peak in June can be indicative of the summer months driving higher foot traffic, as people engage more in outdoor activities and social gatherings, leading to more frequent café visits.
* **Seasonality**: The data suggests that seasonality plays a role in Maven Roasters’ sales trends, with sales increasing in the warmer months, which is common in the food and beverage industry, especially for cafés.

This information can be useful for inventory and staffing management, with a focus on ensuring higher stock levels and more staff during peak months like April, May, and June, while potentially adjusting resources during slower months like February.

**Q.2: Which days of the week tend to be busiest, and why do you think that is the case?**

* **Friday and Monday** are the busiest days in terms of total sales, each exceeding $100,000 in sales.
  + **Friday**: Total sales were **$101,373** across **21,701 transactions**.
  + **Monday**: Total sales were **$101,677.28** across **21,643 transactions**.
* **Thursday and Wednesday** also show strong sales numbers:
  + **Thursday**: $100,767.78 in sales from **21,654 transactions**.
  + **Wednesday**: $100,313.54 in sales from **21,310 transactions**.
* **Sundays and Saturdays** are the least busy days in terms of total sales and transactions.
  + **Sunday**: $98,330.31 in sales from **21,096 transactions**.
  + **Saturday**: $96,894.48 in sales from **20,510 transactions**.

**Possible Reasons:**

* **Fridays and Mondays** being the busiest could be attributed to:
  + **Friday**: The end of the workweek when people tend to unwind, socialize, or treat themselves to café beverages, boosting sales.
  + **Monday**: The start of the week when people may stop for coffee or other drinks on their way to work, leading to higher morning sales.
* **Sundays and Saturdays**, though weekends, tend to have slightly lower sales, which might be because people might spend more time relaxing at home, reducing café foot traffic.

In summary, **Friday and Monday** are the peak days for sales, while **Saturday and Sunday** are comparatively quieter in terms of both total sales and transaction volume. This insight can help Maven Roasters optimize staffing and promotions around their peak days to maximize sales potential.

**Q.3. Which products are sold most and least often? Which drive the most revenue for the business?**

The analysis of product sales provides valuable insights into consumer preferences and revenue drivers:

* **Most Sold Products**:
  + **Brewed Chai tea** is the most popular product by volume, indicating a strong preference for chai among customers.
  + **Gourmet brewed coffee** follows closely behind in terms of quantity sold.
  + Both products are staples in many coffee shops and cafés, offering affordable yet popular options that resonate with the target market.
* **Least Sold Products**:
  + While specific least-sold products are not directly highlighted in this dataset, products that are likely not driving as much sales volume could be niche or premium items, such as specialty or flavoured drinks.
* **Revenue Drivers**:
  + **Barista Espresso** stands out as the top revenue-generating product, despite not being the most frequently sold. This indicates that the espresso is likely priced higher, leading to greater revenue contribution per unit sold.
  + Other significant revenue drivers include **Hot Chocolate** and **Brewed Black Tea**, both of which are sold in moderate quantities but contribute more heavily due to higher pricing.

This data is crucial for optimizing the product mix. By focusing on marketing higher-revenue products like espresso or promoting volume drivers like chai tea, the business can better manage inventory and maximize profits.