

# Exploratory Data Analysis on Coffee Sales

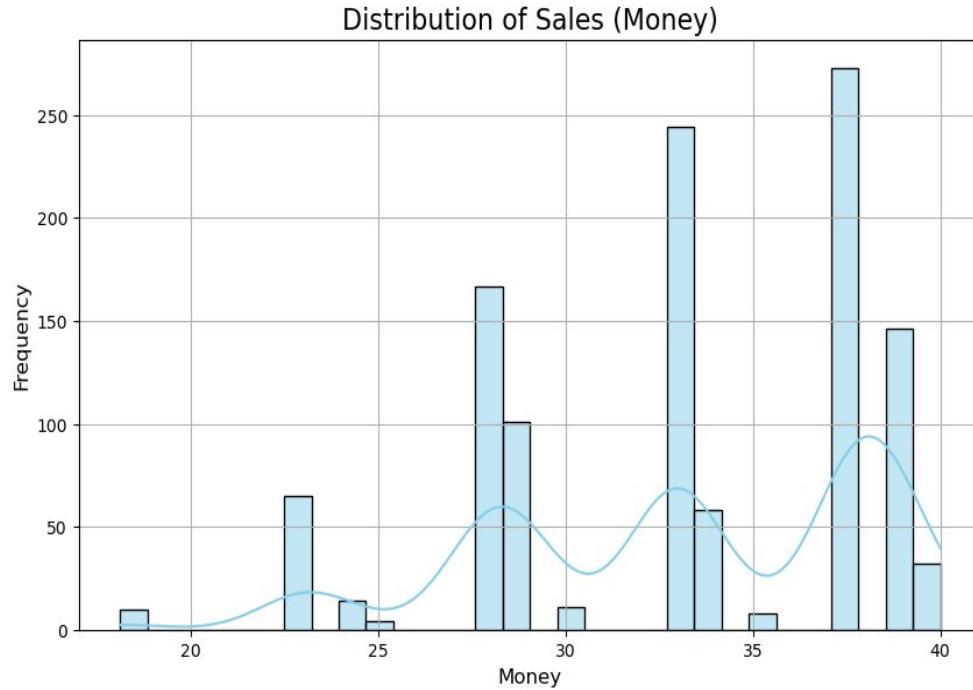
Done By:  
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# Introduction

- This dataset contains detailed records of coffee sales from a vending machine.
- It is intended for analysis of purchasing patterns, sales trends, and customer preferences related to coffee products.
- These visualizations provide actionable insights into sales trends, customer preferences, and peak business hours.

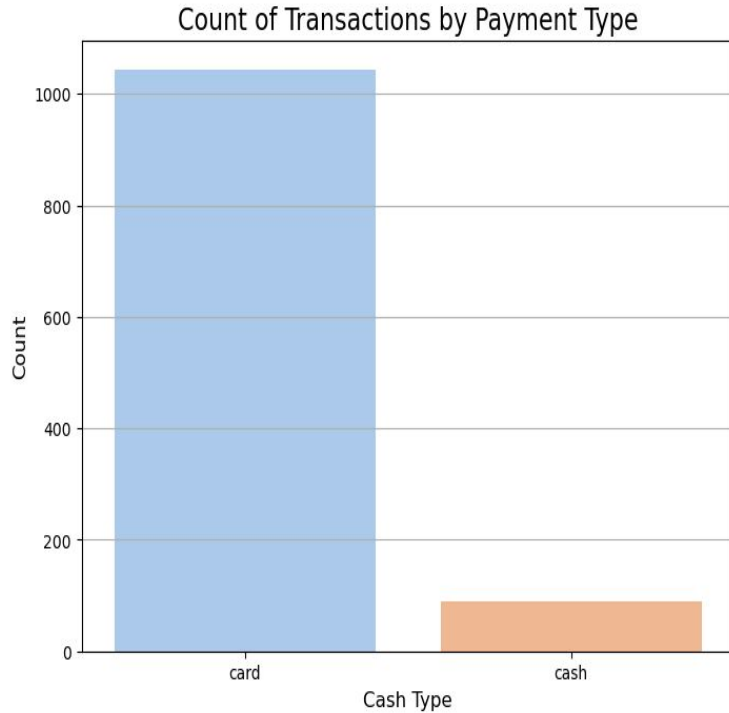
# Univariate Analysis

## a. Distribution of the 'money' column



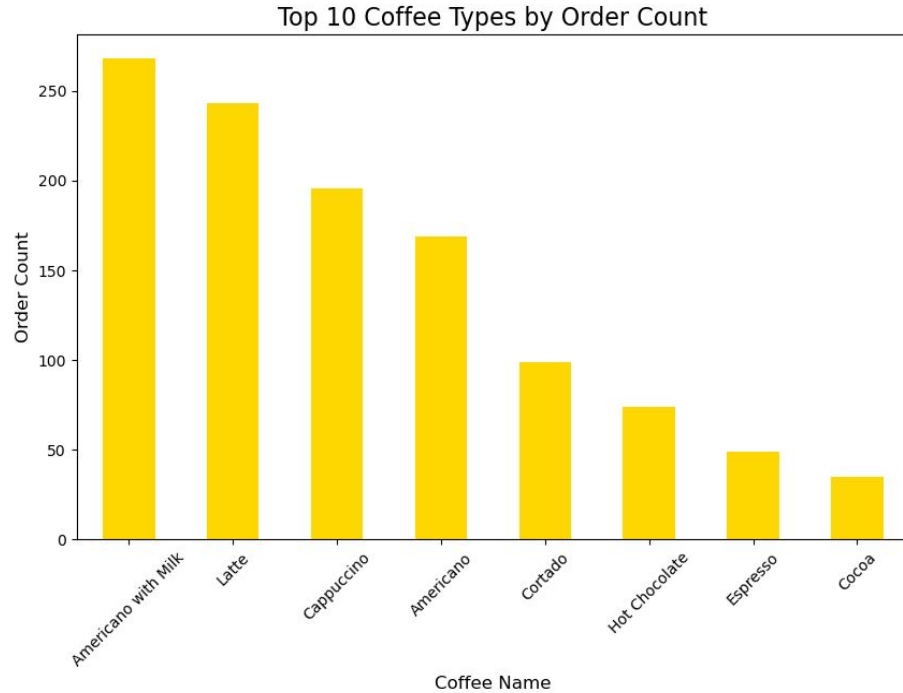
The distribution shows multiple peaks, indicating that sales amounts are clustered around specific values. This could be due to fixed pricing for popular coffee items or promotions influencing purchase behavior.

## b. Count of 'cash\_type'



The majority of transactions are card-based, while cash transactions are minimal.

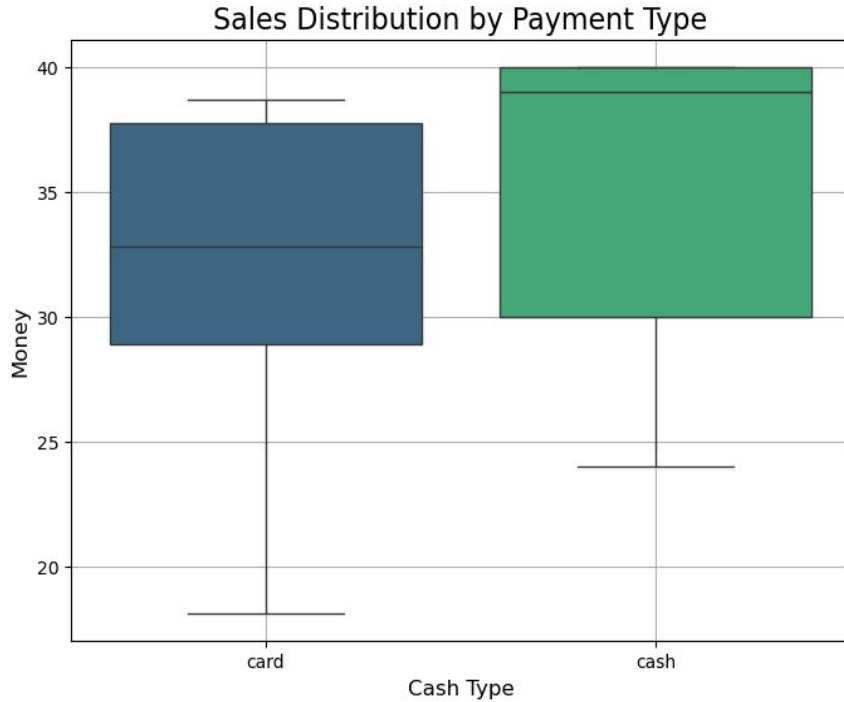
## c. Coffee popularity



The most popular coffee types include "Americano with Milk," "Latte," and "Cappuccino." These three contribute significantly to overall sales.

# Bivariate Analysis

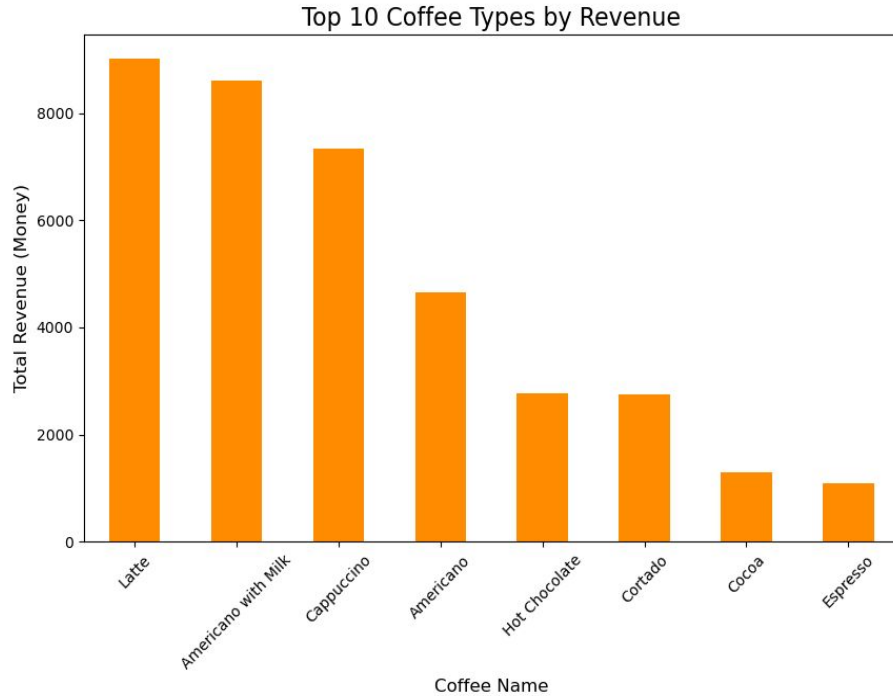
## a. Relationship between 'money' and 'cash\_type'



Cash payments have a higher median sales amount compared to card payments.

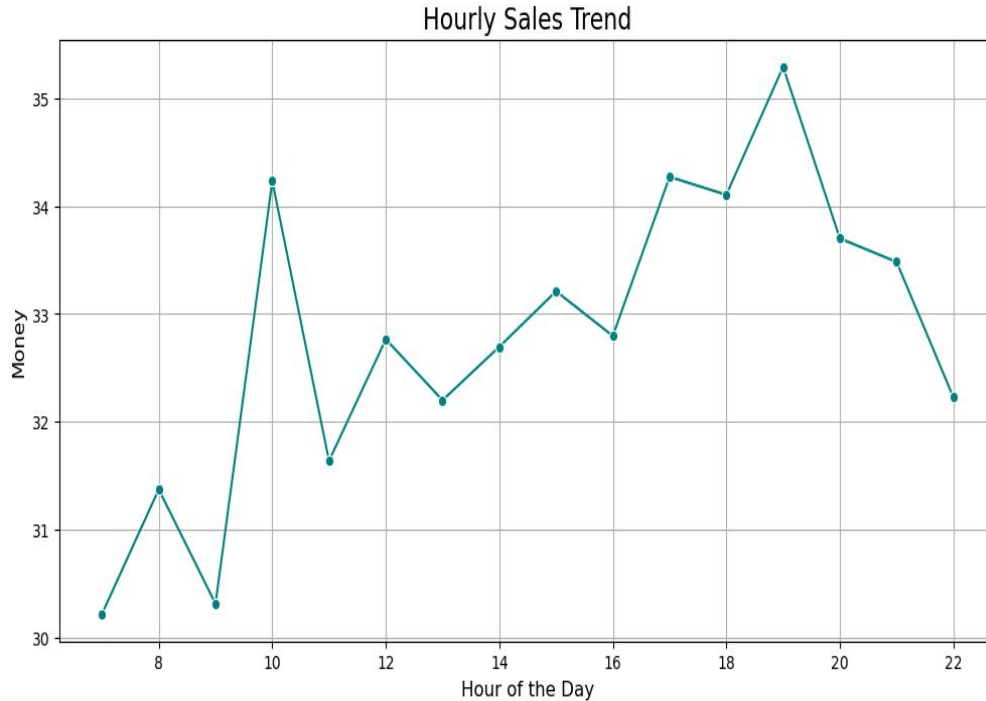


## b. Coffee types contributing to revenue



“Latte” generates most amount of the Revenue followed by “Americano with milk” and “Cappuccino”.

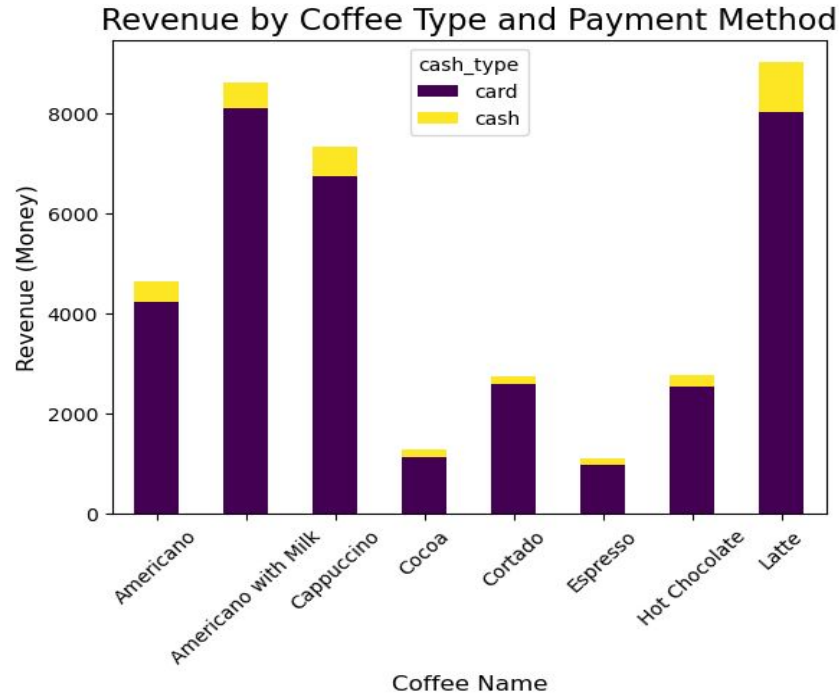
### c. Hourly sales trend



Sales are highest between 8 AM and 11 AM, with another spike around 3 PM. However, sales drop significantly after 6 PM and are minimal overnight.

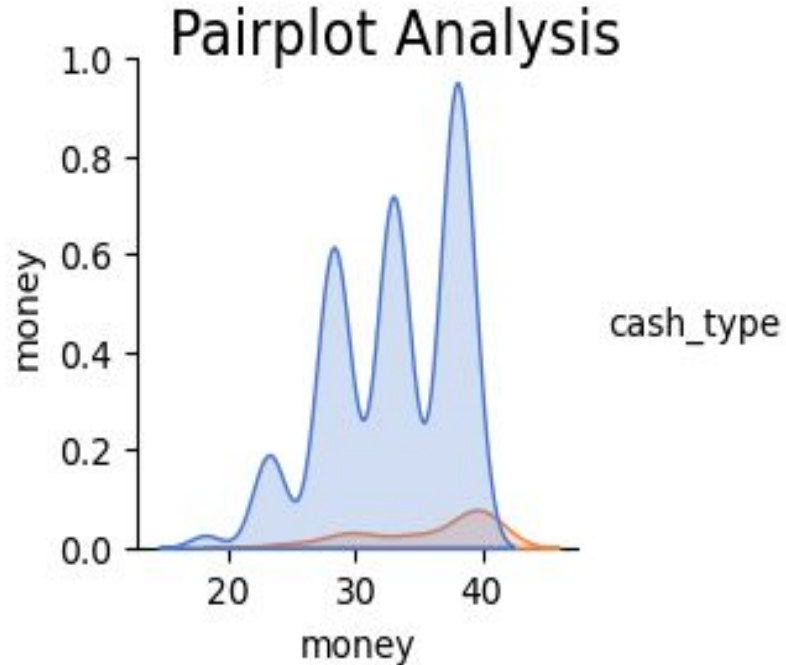
# Multivariate Analysis

## a. Sales by coffee type and payment type



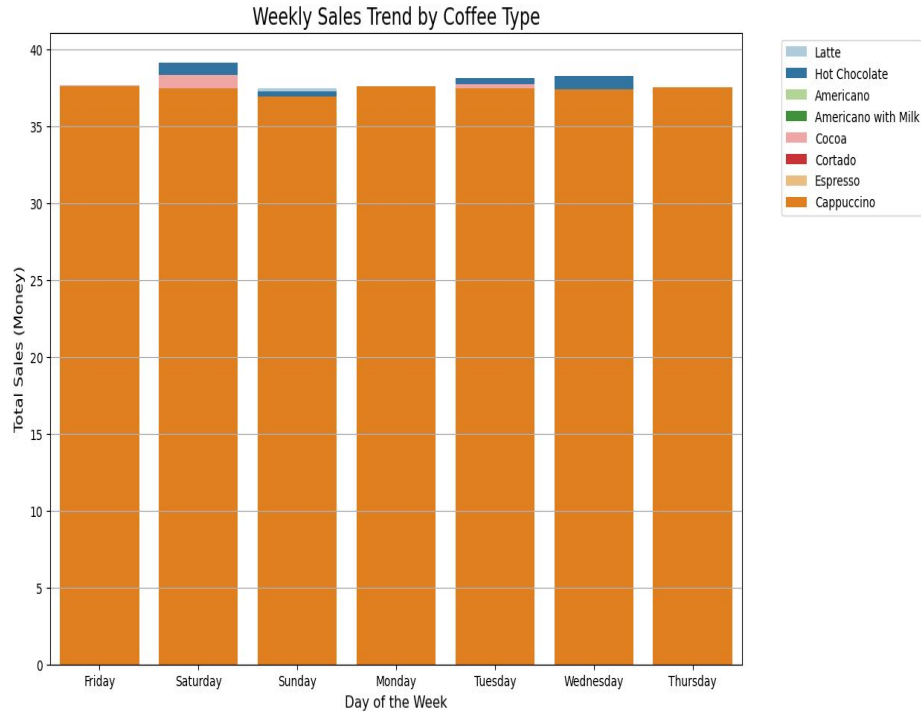
"Americano with Milk" and "Latte" generate the most revenue, predominantly through card payments. Across all coffee types, card payments contribute more to the revenue than cash payments, indicating a strong preference for card transactions.

b. Pairplot to explore relationships between categorical variables and 'money'



The blue distribution (card payments) has multiple peaks around 20, 30, and 40, suggesting a varied spending pattern. Meanwhile, the orange distribution (cash payments) is relatively flat, indicating less variability in spending amounts.

## c. Weekly Sales Trend by Coffee Type



"Americano" and "Latte" are the top-selling coffee types, and overall coffee sales spike significantly on weekends, particularly on Saturdays. This trend suggests a focus on stocking these coffee types and offering promotions during weekends to capitalize on increased customer demand.

Thank You