**Dataset:**

**Workers Timing Dataset** The dataset includes:

* + - Time of entry
    - Time of exit

**Orders Dataset** This dataset includes:

* + - date: Date the order was placed
    - order\_id: Unique identifier for each order
    - customer\_id: Identifier linking the order to a customer
    - beverage: The type of beverage ordered
    - cost\_price: The cost price of the beverage
    - selling\_price: The price at which the beverage was sold

**Customer Dataset**  
 This dataset includes:

* + - customer\_id: Unique identifier for each customer
    - first\_name: Customer’s first name
    - last\_name: Customer’s last name
    - email: Customer’s email address
    - city: The city where the customer is located
    - country: The country of residence for the customer
    - user: User type identifier
    - code: Customer code for internal use

**Data Preprocessing**

* **Employee Working Hours Data Processing:**
  + **Convert Working Time to Decimal:** Convert the benchmark working time (8 hours and 30 minutes) into a decimal format for easy comparison (8.5 hours).
  + **Calculate Actual Working Hours:** Convert minutes worked into a fraction of an hour (e.g., 30 minutes = 0.5 hours) and sum them with the whole hours worked.
  + **Determine Compliance:** Compare actual working hours with the benchmark (8.5 hours), allowing a tolerance of -6 minutes.
  + **Hours and Minutes Worked Calculation:** Break down the total hours worked into whole hours and minutes for clear visualization.
  + **Deviation in Minutes:** For non-compliant entries, calculate the deviation in minutes compared to the benchmark time.
  + **Non-Compliance Message:** For non-compliant cases, generate a message with the specific date, hours worked, and deviation.
* **Orders and Customers Data Processing**
* **Analysis tasks**
  + **Profit Calculation:** Calculate profit per sale as the difference between selling\_price and cost\_price for each order in the Orders dataset.
  + **Top 5 Customers by Sales:** Using the Orders dataset, aggregate sales by customer\_id and identify the top 5 customers with the highest total sales.
  + **Top Cities by Sales:** Aggregate sales by city (from the Customers dataset) and identify the top cities contributing the most to sales.
  + **Monthly Sales Analysis:** Extract the month from the order date and calculate the total profit for each month. Create a chart to visualize monthly sales trends.
  + **Highest Profit % Beverage:** Calculate profit margin for each beverage ((Selling Price - Cost Price) / Cost Price) and identify the beverage with the highest profit margin.
  + **Top 10 Beverage Purchasers:** Identify the top 10 customers who have purchased the most beverages by total number of orders.
  + **Excel Dashboard Creation:** Combine the results from the analysis into a comprehensive Excel dashboard for easy visualization of key insights.
* **Excel Dashboard Creation:** Create an Excel dashboard summarizing the key findings:
  + Sales by top customers
  + Sales by top cities
  + Monthly sales trends
  + Profit margin by beverage