# **AquaFizz Employee Compliance and Sales Analysis**

**1. Project Overview**

* **Objective:** The main goal of this project is to analyze employee working hours and customer order data to ensure compliance with AquaFizz’s policies and optimize sales. The analysis involves examining data on working hours for compliance and generating business insights from customer and sales data.
* **Company Background:** AquaFizz is a newly established beverage startup offering health-focused sparkling water beverages. The company aims to provide refreshing, nutrient-enhanced drinks while promoting overall wellness.
* **Business Task:** The tasks include analyzing employee working hours for compliance with the company's standards and analyzing sales data to gain insights into customer behavior and identify top-performing products.

**2. Data Understanding**

* **Employee Working Hours Data:-** [**Workers Timing Dataset**](https://docs.google.com/spreadsheets/d/1FQRGzpfp1uU-r3ObMpuZJsJWANTkkm-R/edit?usp=sharing&ouid=105807902471570897829&rtpof=true&sd=true)
  + **Dataset Name: Workers Timing Dataset** The dataset includes:
    - Time of entry
    - Time of exit
* **Orders Data:**
  + **Dataset Name:** **Orders Dataset**

**Dataset Link:-** [**Orders Dataset**](https://docs.google.com/spreadsheets/d/19VkIqAtTFHp4P_7jMFauxYmnN1w15Jwx/edit?usp=sharing&ouid=105807902471570897829&rtpof=true&sd=true) 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
* **Customers Data:**
  + **Dataset Name:Customer Dataset  
    Dataset Link :-** [Customer Dataset](https://docs.google.com/spreadsheets/d/1v9Pazr6z7wN2S2U15Ytba7rP1cui972R/edit?usp=sharing&ouid=105807902471570897829&rtpof=true&sd=true)   
     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

**3. 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:**
  + **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.

**4. Analysis Tasks**

* **Profit per Sale:** Calculate the profit for each order by subtracting the cost\_price from the selling\_price.
  + Example:  
     Profit for TropicalTwist = 96.8112 - 45.46 = 51.3512
* **Top 5 Customers by Sales:** Aggregate total sales for each customer using the Orders and Customers datasets. Sort by the total sales to identify the top 5 customers.
* **Top Cities by Sales:** Aggregate total sales by city using the customer\_id from the Customers dataset to group by city. Visualize the sales data in a chart for clarity.
* **Monthly Sales Analysis:** Break down sales by month, calculate the total profit for each month, and create a bar chart to compare sales over time.
* **Highest Profit % Beverage:** Calculate the profit percentage for each beverage type using the formula

**Profit % = -------------------------- x 100**

* **Top 10 Beverage Purchasers:** Aggregate the number of orders per customer and identify the top 10 customers who have purchased the most beverages.
* **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

**5. Conclusion**

* **Employee Hours Compliance:** Ensure that AquaFizz’s employees are working within the agreed time limits and identify any discrepancies for managerial review.
* **Sales Insights:** The analysis provides valuable insights into the top-performing products, customers, and cities, helping AquaFizz to make informed decisions on product offerings and marketing strategies.

**6. Video Explanation Submission**

* **Instructions:** Record a video explaining your approach and the steps you took to solve each task in the Excel project. Ensure the video is no more than 10 minutes long, and make sure your face is visible while explaining the process.

**7. Final Submission Details**

* **Submission Format:** Submit a zip file containing the Excel file with your analysis and an explanatory video. Both files are required for evaluation.