

Workshop: Finding Objects, then classes, then model

Problem

Create a system that compiles attendance records, products and prices for each artisan per month to design an efficient inventory, and generate reports to help better the efficiency and decision-making.

To understand what the system needs to do, we need to comprehend how the sale of this type of product works in this kind of market.

Overview

Referring to the sales of artisan, we would focus on each product and its variants for each artisan selling in the market since many of them have similar products and prices, we will also take into account each artisan's attendance, the time they arrive and start their shift at the market, and their departure time.

Background

Based on the 10 artisans, they currently manage several manual lists to record attendance, sales, and products. However, this method presents drawbacks such as human error, lack of real-time updating, and difficulty generating accurate reports. Therefore, the proposal is to integrate a digital system that centralizes and automates these processes, making management much more efficient.

For example, in the attendance record, the system would pre-assign which artisan should attend on a given day. If the artisan fails to comply with their assigned attendance, the system would automatically apply a financial penalty, deducting \$5 from their account or corresponding inventory. This would not only encourage individual accountability but also reduce the administrative burden of manually tracking violations and penalties.

Regarding sales, the system would allow for the immediate recording of each product sold. At the end of each month, an automatic count of all units sold by each artisan would be performed, integrating this information directly into the corresponding inventory. This way, it would be possible to update product inventory in real time, calculate revenue generated by each artisan, and generate monthly sales reports without having to manually process the data.

Table 1-Example of products by artisan

| Artisans | Products | Amount | Unit price |
|-----------------|----------------------|---------------|-------------------|
| Lourdes T. | Cedazo | 8 | \$ 12 |
| | Cedazo Llaveró | 5 | \$ 3.5 |
| | Guanga | 1 | \$18 |
| | Cepillos | 12 | \$ 4 |
| Guido P. | Cedazo Pichca | 1 | \$37 |
| | Cedazo Sucta | 2 | \$30 |
| | Cedazo Parejo | 1 | \$27 |
| | Jarabe Agave (500ml) | 5 | \$10 |
| Narcisa A. | Cintillos | 10 | \$5 |
| | Cedazo | 5 | \$15 |
| | Aretes | 12 | \$3 |
| | Correa | 1 | \$20 |
| Leonor C. | Cuchara | 2 | \$22 |
| | Cedazo | 5 | \$10 |
| | Sombrero | 4 | \$6 |
| Katty L. | Aretes | 10 | \$4 |
| | Pulsera | 35 | \$1 |
| | Llaveró | 13 | \$2.5 |

Analyst Comparison

To compare the artisans in the market, the sales and attendance information recorded daily will be used. Each artisan will have:

Sales: the record of all products sold, including quantity, unit price, and total price.

Attendance: the days they attended and managed their stand in the market.

Comparison Metrics: Total Sales (TV): sum of all sales made by the artisan during the month.

Average Daily Income (ADI): total sales divided by the days of attendance.

Total Number of Products Sold: sum of all units sold.

Best-Selling Product: product with the highest quantity of sales.

Penalties: deduction for each day of absence, in case of implementation of attendance control.

This comparison will help identify the most productive and responsible artisans, optimizing inventory allocation and improving decision-making in market management

Table 2-Example of stock and sales of artisans

| Month: January | | | | | |
|----------------|----------------------|-------|------------|------------|---------------|
| Artisans | Products | Stock | Unit price | Sales made | Current stock |
| Lourdes T. | Cedazo | 20 | \$ 12 | 14 | 6 |
| | Cedazo llavero | 10 | \$ 3.5 | 5 | 5 |
| | Guanga | 10 | \$18 | 2 | |
| | Cepillos | 10 | \$ 4 | 7 | 3 |
| Guido P. | Cedazo Pichca | 10 | \$37 | 1 | 9 |
| | Cedazo Sucta | 10 | \$30 | 2 | 8 |
| | Cedazo Parejo | 10 | \$27 | 1 | 9 |
| | Jarabe Agave (500ml) | 20 | \$10 | 5 | 15 |

| | | | | | |
|---------------|-----------|----|------|----|---|
| Narcisa A. | Cintillos | 10 | \$5 | 10 | 0 |
| | Cedazo | 10 | \$15 | 5 | 5 |
| | Aretes | 20 | \$3 | 12 | 8 |
| | Correa | 10 | \$20 | 1 | 9 |

