

Exercise

Topics:

Map() • Filter() • Reduce() • forEach()

Scenario

You are building a **data analysis system** for your future food delivery app in Somaliland.

The system must analyze daily customer orders and help the business understand sales and customer behavior.

You will use **JavaScript array methods** to transform, filter, and summarize the data.

◆ Question

Create a system that analyzes food delivery orders using **map()**, **filter()**, **reduce()**, and **forEach()**.

◆ Tasks

Task 1 – Show All Orders (forEach)

You have the following array:

```
let orders = [  
  { customer: "Ali", total: 25, city: "Hargeisa" },  
  { customer: "Amina", total: 15, city: "Berbera" },  
  { customer: "Hassan", total: 40, city: "Hargeisa" },  
  { customer: "Sahra", total: 10, city: "Borama" }  
];
```

Use **forEach()** to print:

- Customer name
 - Order total
 - City
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✅ Task 2 – Find High-Value Orders (filter)

Use **filter()** to:

- Find orders greater than **\$20**.
 - Print the customers who made these orders.
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✅ Task 3 – Business Insights (map & reduce)

1. Use **map()** to create a new array containing only order totals.

2. Use **reduce()** to calculate:

- Total daily revenue.

$$\text{Total Revenue} = \text{Order1} + \text{Order2} + \text{Order3} + \dots + \text{OrderN}$$

- Average order value.

$$\text{Average Order} = \text{Total Revenue} \div \text{Number of Orders}$$

◆ Example Output

#Task 1: Outputs

Ali ordered \$25 from Hargeisa

Amina ordered \$15 from Berbera

Hassan ordered \$40 from Hargeisa

Sahra ordered \$10 from Borama

#Task 2: Outputs

High value customers: Ali, Hassan

#Task 3: Outputs

Total revenue: \$90

Average order: \$22.5

◆ Algorithm

Step 1 – Prepare Data

1. Create an array orders with objects: {customer, total, city}.

Step 2 – Show All Orders

1. Use forEach() to loop through each order.
2. Print customer, total, and city.

Step 3 – Filter High Orders

1. Use filter() to select orders where total > 20.
2. Extract and print the customer names.

Step 4 – Map Totals

1. Use map() to create an array of only totals.

Step 5 – Calculate Revenue

1. Use reduce() to sum all totals.
2. Divide by number of orders to get the average.

Good Luck