Business Problem: A car rental company wants to analyze the rental durations of itscustomers to understand the typical rental period and optimize its pricing andfleet management strategies. Data: Let's consider the rental durations (in days) for asample of 50 customers:

3, 2, 5, 4, 7, 2, 3, 3, 1, 6, 4, 2, 3, 5, 2, 4, 2, 1, 3, 5, 6, 3, 2, 1, 4, 2, 4, 5, 3, 2, 7, 2, 3, 4, 5, 1, 6, 2, 4, 3, 5, 3, 2, 4, 2, 6, 3, 2, 4, 5

**1. Mean (average rental duration)**

Mean=Total of all durationsNumber of rentalsMean=Number of rentalsTotal of all durations​

*Tally the counts*

| **Duration (days)** | **Count** |
| --- | --- |
| 1 | 4 |
| 2 | 13 |
| 3 | 11 |
| 4 | 9 |
| 5 | 7 |
| 6 | 4 |
| 7 | 2 |

*Sum of all durations*

1×4+2×13+3×11+4×9+5×7+6×4+7×2=4+26+33+36+35+24+14=172 days

​1×4+2×13+3×11+4×9+5×7+6×4+7×2=4+26+33+36+35+24+14=172 days

​Mean=172/50=3.44 days (rounded to two decimals)

**2. Median (central value)**

With 50 observations, the median is the average of the 25th and 26th values in the ordered list.

*Ordered cumulative counts*

| **Value** | **Cumulative count** |
| --- | --- |
| 1 | 4 |
| 2 | 17 |
| 3 | 28 |
| 4 | 37 |
| 5 | 44 |
| 6 | 48 |
| 7 | 50 |

Positions 25 and 26 lie in the “3” range (18‑28).

Median=3+3/2=3 days

**3. Mode (most frequently occurring duration)**

The highest frequency is for **2 days**, which appears 13 times.

Mode=2 days

**Summary**

| **Statistic** | **Value** |
| --- | --- |
| **Mean** | 3.44 days |
| **Median** | 3 days |
| **Mode** | 2 days |