

# Sales Data Analysis for Retail Store

This application analyzes sales data for various product categories.

## Sales Data

	product_id	product_name	category	units_sold	sale_date
0	1	Product 1	Home	25	2023-01-01 00:00:00
1	2	Product 2	Sports	15	2023-01-02 00:00:00
2	3	Product 3	Electronics	17	2023-01-03 00:00:00
3	4	Product 4	Home	19	2023-01-04 00:00:00
4	5	Product 5	Home	21	2023-01-05 00:00:00
5	6	Product 6	Sports	17	2023-01-06 00:00:00
6	7	Product 7	Electronics	19	2023-01-07 00:00:00
7	8	Product 8	Electronics	16	2023-01-08 00:00:00
8	9	Product 9	Home	21	2023-01-09 00:00:00
9	10	Product 10	Clothing	21	2023-01-10 00:00:00

## Descriptive Statistics

	units_sold
count	20
mean	18.8
std	3.3023
min	13
25%	17
50%	18.5
75%	21
max	25

Mean Units Sold: 18.8

Median Units Sold: 18.5

Mode Units Sold: 17

## Category Statistics

	Category	Total Units Sold	Average Units Sold	Std Dev of Units Sold
0	Clothing	21	21	None
1	Electronics	73	18.25	2.2174
2	Home	181	20.1111	3.7231
3	Sports	101	16.8333	2.7142

## Confidence Interval for Mean Units Sold

```
(np.float64(17.254470507823573), np.float64(20.34552949217643))
```

## Hypothesis Testing (t-test)

T-statistic: -1.6250928099424466, P-value: 0.12061572226781002

Fail to reject the null hypothesis: The mean units sold is not significantly different from 20.

## Visualizations



