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
10	11	Product 11	Home	17	2023-01-11 00:00:00
11	12	Product 12	Home	22	2023-01-12 00:00:00
12	13	Product 13	Home	14	2023-01-13 00:00:00
13	14	Product 14	Home	17	2023-01-14 00:00:00
14	15	Product 15	Sports	17	2023-01-15 00:00:00
15	16	Product 16	Electronics	21	2023-01-16 00:00:00
16	17	Product 17	Sports	21	2023-01-17 00:00:00
17	18	Product 18	Sports	13	2023-01-18 00:00:00
18	19	Product 19	Sports	18	2023-01-19 00:00:00
19	20	Product 20	Home	25	2023-01-20 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

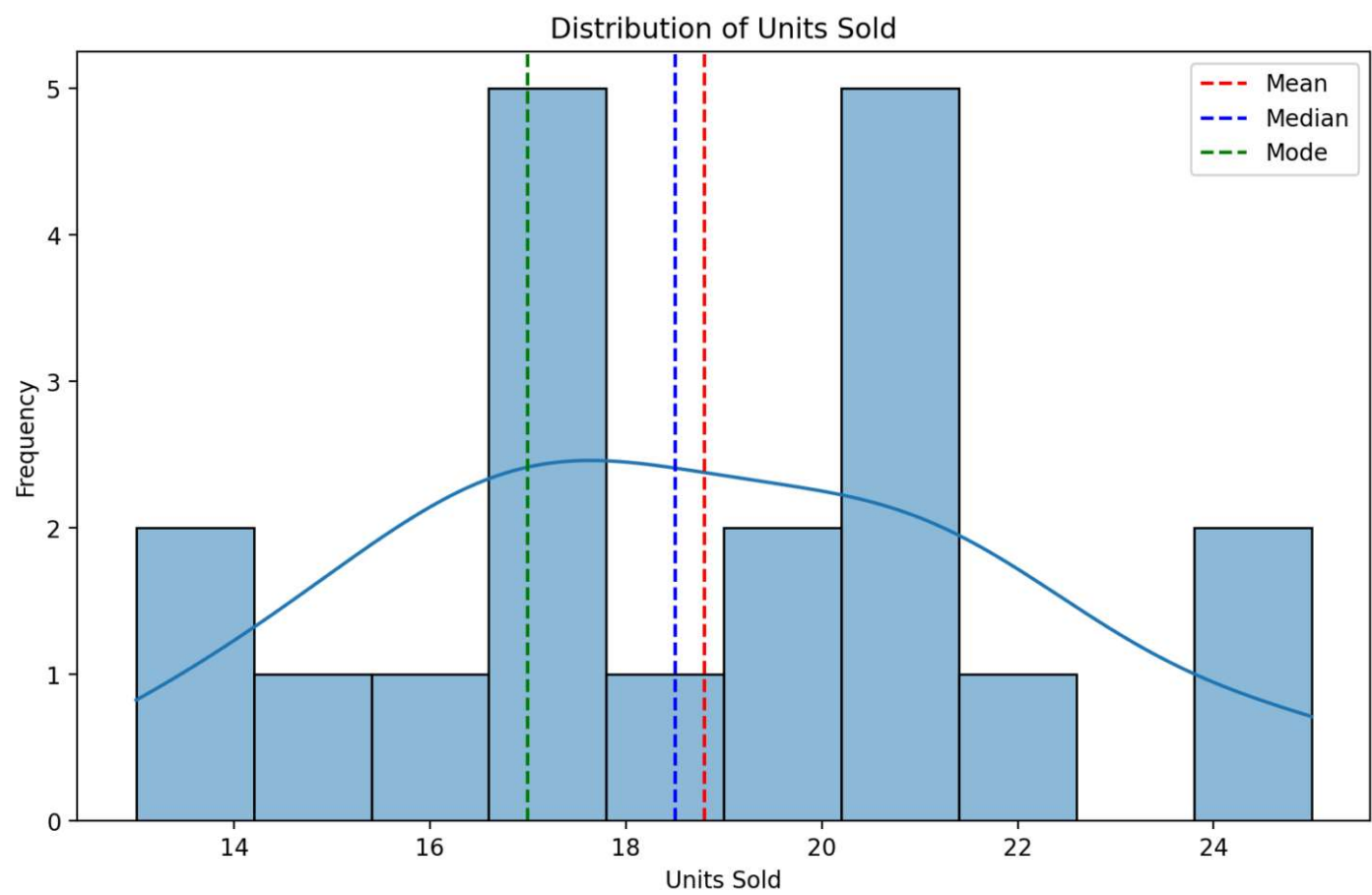# Confidence Interval for Mean Units Sold

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(np.float64(17.254470507823573), np.float64(20.34552949217643))
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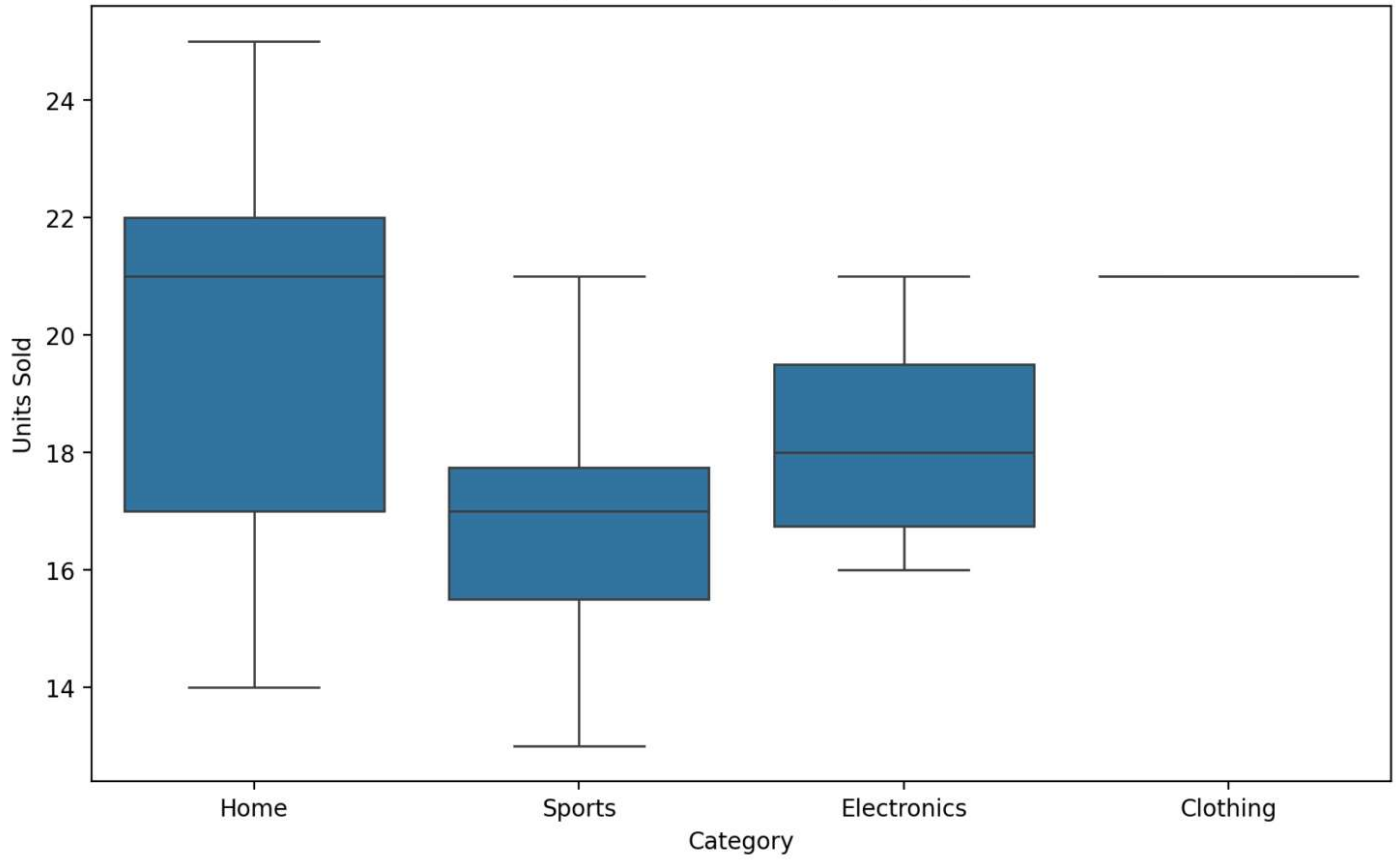
Hypothesis Testing (t-test)

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

Distribution of Units Sold

Boxplot of Units Sold by Category

Total Units Sold by Category