Sales Data Analysis and Visualization

📋 Sales Data

	product_id	product_name	category	units_sold	sales_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**: 18.80

- **Median**: 18.5

- **Mode**: 17

- **Variance**: 10.91

- **Standard Deviation**: 3.30

📦 Category-wise 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 Intervals

95% Confidence Interval: 17.25 to 20.35

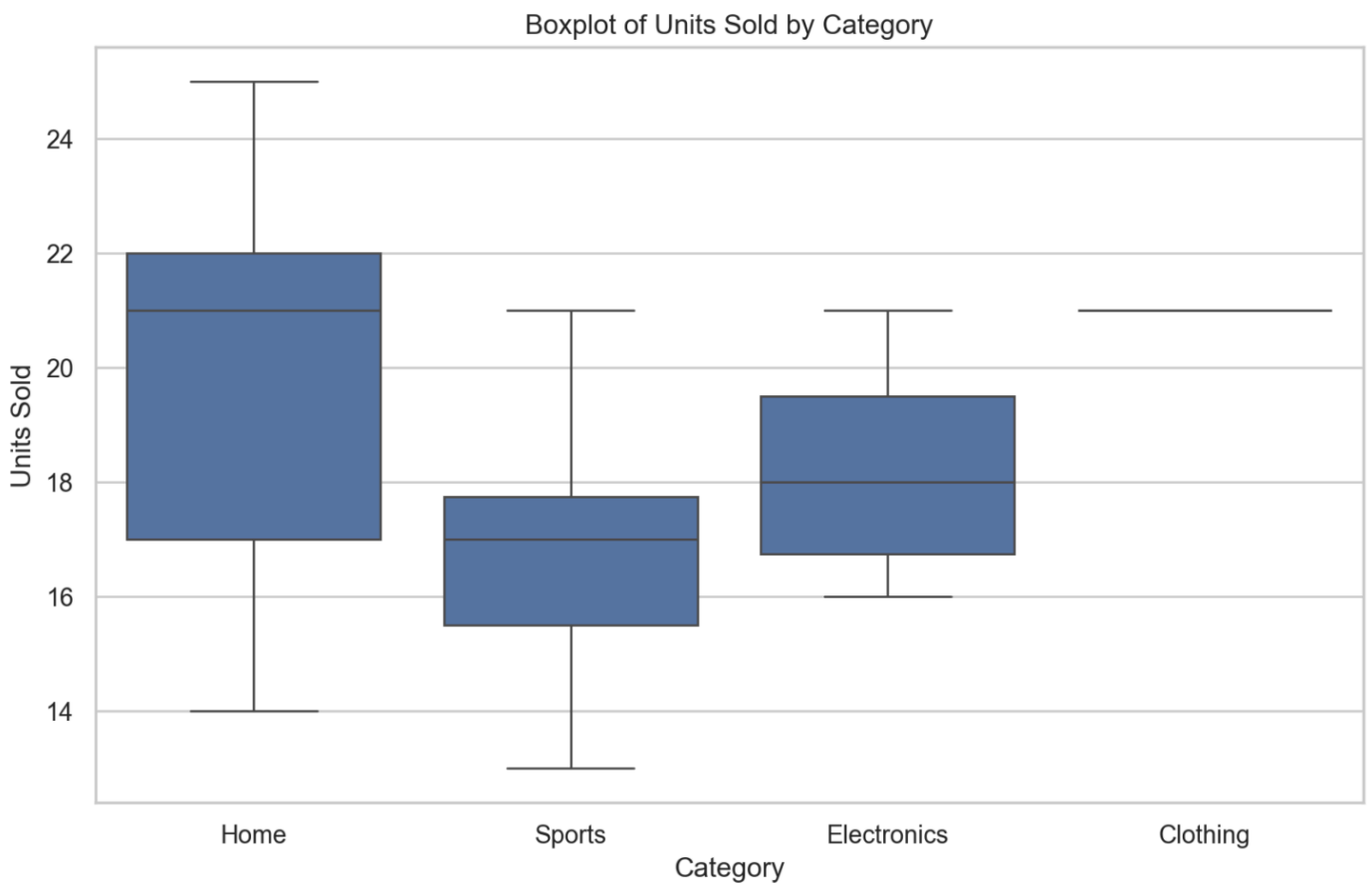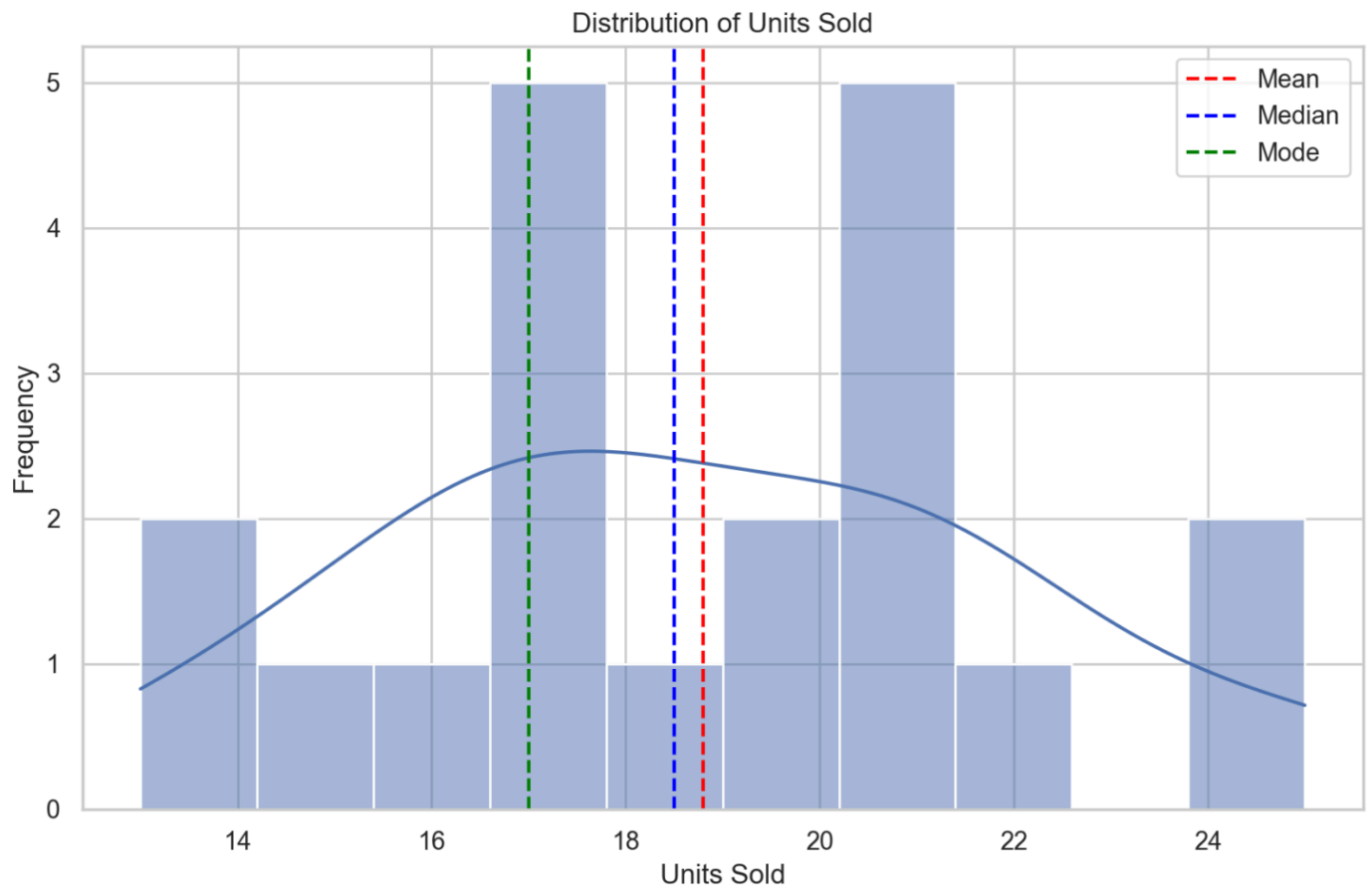99% Confidence Interval: 16.69 to 20.91

🧪 Hypothesis Testing

- **Null Hypothesis**: Mean units sold = 20
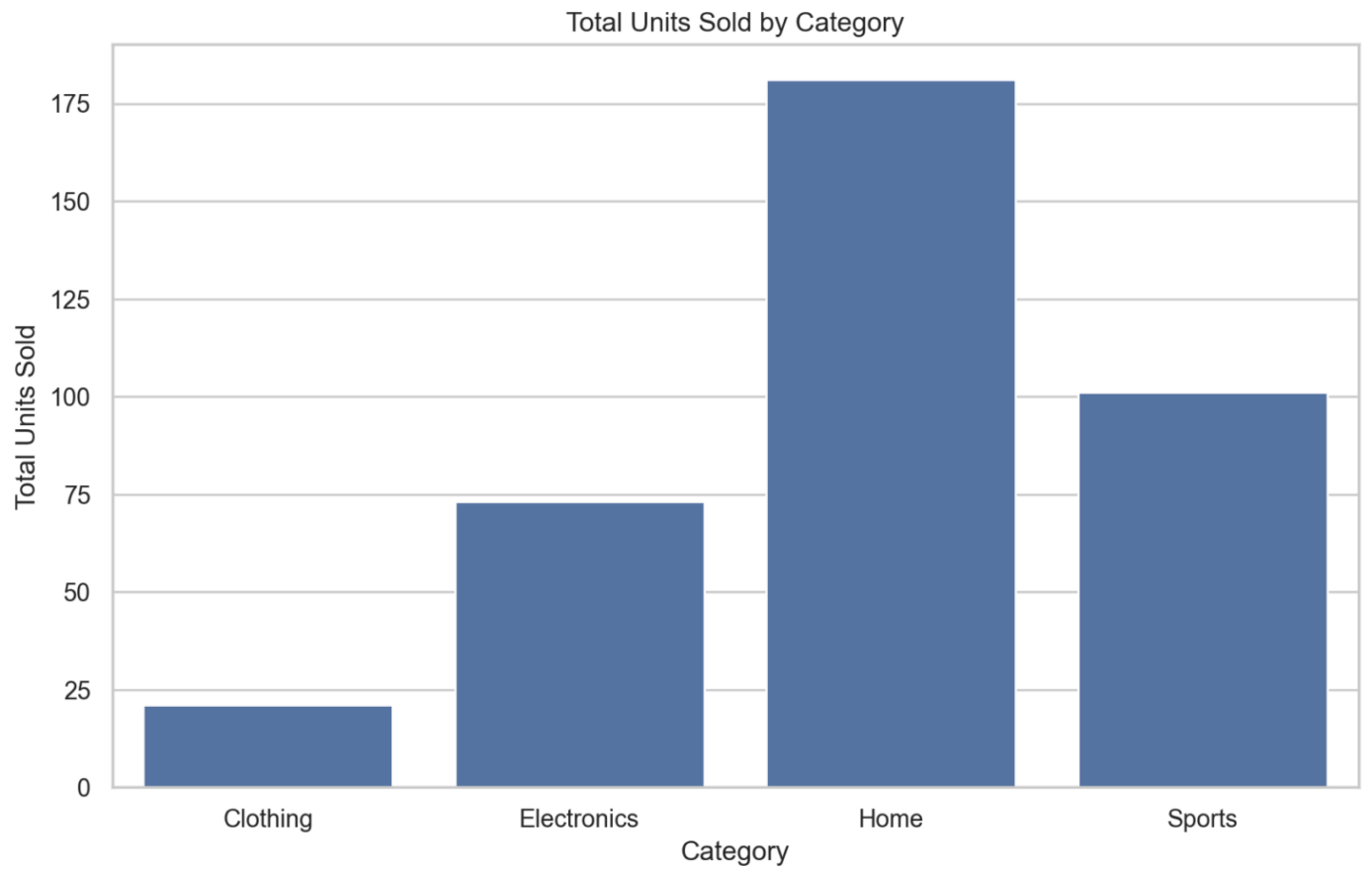
- **Alternative Hypothesis**: Mean units sold ≠ 20

T-statistic: -1.6251, P-value: 0.1206

Fail to reject the null hypothesis: No significant difference from 20.

📈 Visualizations

Distribution of Units Sold

Boxplot of Units Sold by Category

Total Units Sold by Category

Created with 💗 using Streamlit