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Assignment-3

Data Driven Decision Making

Task 1 Below is a small dataset of sales numbers for 5 days.

Day	Sales
1	10
2	12
3	14
4	16
5	18

$$\rightarrow \text{Mean} = \frac{\text{Sum of obs}}{\text{No. of obs}} = \frac{70}{5} = 14$$

$$\rightarrow \text{Median} = 10, 12, 14, 16, 18$$

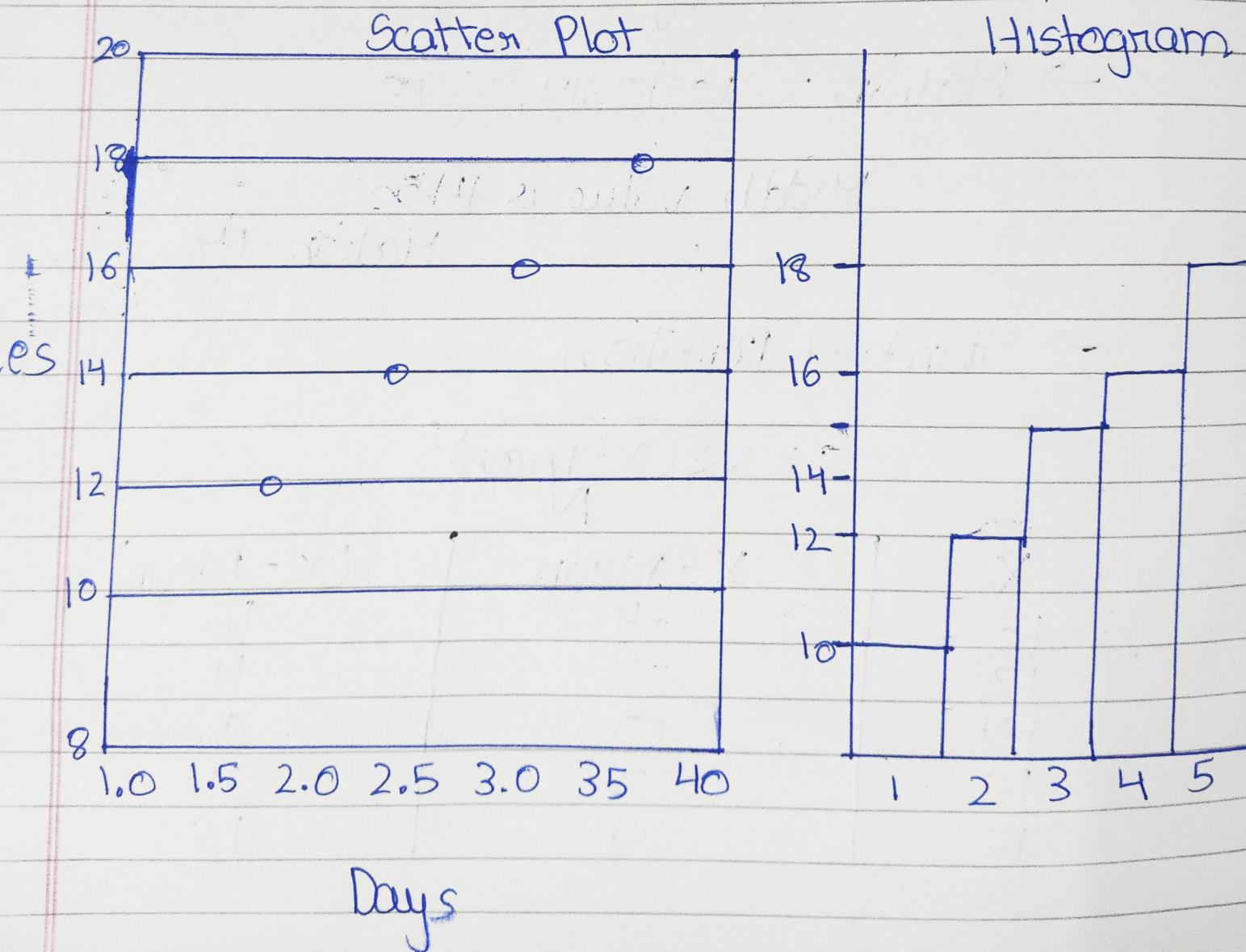
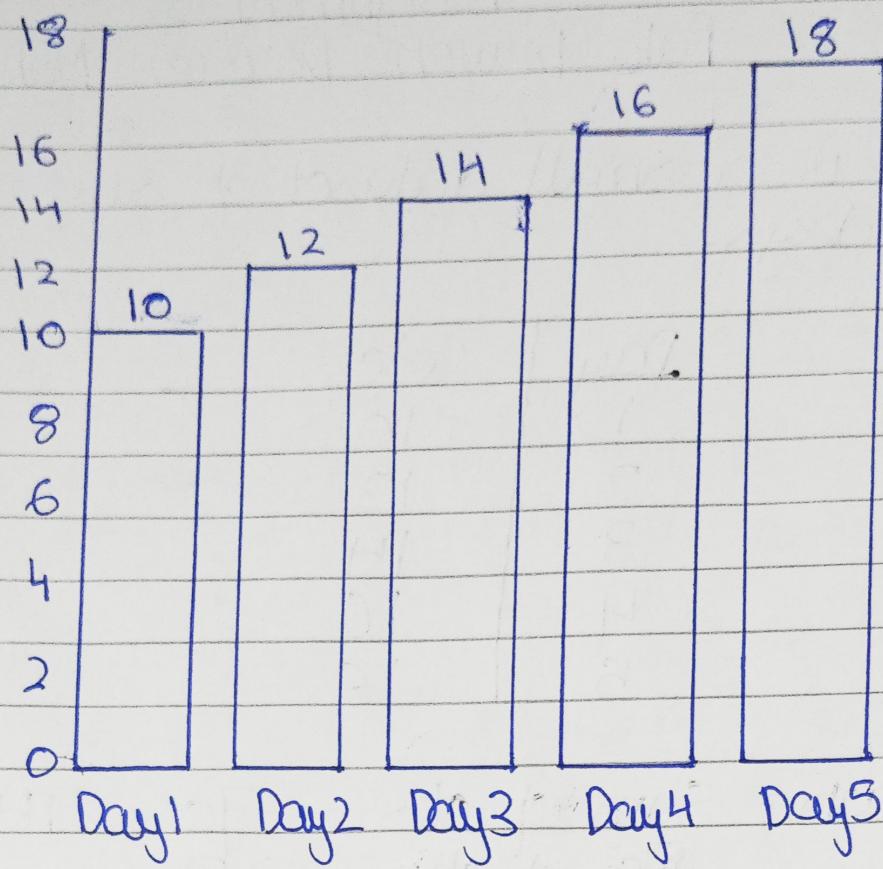
Middle value is 14.50.

$$\text{Median} = 14$$

\rightarrow Standard Deviation

$$\sigma = \sqrt{\frac{\sum (x - \text{mean})^2}{N}}$$

X	X - Mean	$(x - \text{Mean})^2$
10	-4	16
12	-2	4
14	0	0
16	2	4
18	4	16



Task 3

1) Insight: clean & consistent Upward Trend in Sale

These sales increase by a constant amount (+2) each day from 10 on day 1 to 18 on day 5. A line chart would show a perfectly straight upward sloping line.

• Decision: The current sales strategy is highly effective in growth. The decision maker should maintain scale this strategy.

2) Insight: Low Volatility

Standard deviation is low but the rate of change has zero variance

• Decision: The business can establish high accurate short term sales forecast. This allows for precise decision regarding inventory management.

3) Insight: Strong growth rate

Sales increased from 10 to 18, representing an 80% growth in less than a week.

• Decision: Given the strong, predicted growth this is ideal time to consider strategic investment or expansion.

Task 4 Reflection on Visual Storytelling

- It reveals the big picture immediately: Provide data set, simply reading the no. takes mental effort. to process. A line chart shows scales are going up smoothly
- It highlights patterns, outliers & Trends: visual excel shows relationships that are hidden in tables
- It increases Accessibility & Memorability - A well designed chart can be understood by non technical audience, democratizing data access.

In short storytelling through visuals enhances data interpretation by reducing cognitive load, making the core message faster to comprehend & easier to act upon.