

Assignment - 3

= foundation of Data driven decision making

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Task 1 - using a sample dataset, compute mean, median and standard deviation.

sol Data chosen:

Month	Sales (in ₹)
January	25000
February	28000
March	30000
April	35000
May	40000
June	38000

Calculations :-

Mean (Average Sales):

$$\begin{aligned}
 \text{formula} &= (\text{sum of all sales}) / (\text{No. of Months}) \\
 &= 25000 + 28000 + 30000 + 35000 + 40000 + 38000 / 6 \\
 &= 196000 / 6 \\
 &= ₹ 32667.
 \end{aligned}$$

2. Median (middle value)

ordered sales = 25000, 28000, 30000, 35000,
38000, 40000.

middle 2 values = 30000 and 35000

median = $30000 + 35000 \div 2 = 32500$.

3. Standard deviation. —

steps -

- o find average (32667)
- o subtract each value from mean, square it
- and take average.
- o Result = 5,270 (approx).

→ lower standard deviation means sale are consistent without large up and downs.

Task 2 - create 3 chart to visualize Data Trends.

Sof = Chart 1 - Bar charts : (Monthly sales)

- show sales growth month by month.

- easy to compare sale value across months.

Chart - 2 - line charts : sales trend

Shows an upward trends, meaning sales increase steadily from January to May. Slight dip in June indicate possible seasonal change.

chart 3. - Histogram | frequency of sales range.

Shows how many months had sales in specific ranges.

- Example :
- ₹ 25K - ₹ 30K : 2 months
 - ₹ 30K - ₹ 35K : 2 months
 - ₹ 35K - ₹ 40K : 2 months

Task 3: Write 3-5 Insights from the visualisation.

1. Sales growth: Sales increased from ₹ 25000 in January to ₹ 40000 in May - a clear upward trend.
 - Indicate effective marketing or seasonal demand.
2. Stability: The standard deviation is low, showing consistent growth without sudden drops.
 - Suggests step Performance
3. Slight decline in June: Sale dipped slightly in June (38000).
 - May be due to market saturation or seasonal effects.
4. Mid year Boosts: March-May saw highest rise in sales.
 - Business can focus promotion in these month next year.
5. Decision Point:
 - Data show marketing in early month give good return.
 - Company should plan major campaigns before May to maximize sales.

4 Reflection how Visuals storytelling helps.

make data easy to understandable and remember.

charts and graphs shows pattern faster than reading numbers.

Helps identify trends (like steady growth or sudden drops).

- useful for managers and team to make quick and confident decisions.
- It turn raw data into clear story - "Sales are increasing, but June need attention".

Example :-

Instead of just saying "sales increased", the bar and line charts show how strongly they grew.

That's the power of visualisation - it turns data into insight and action.