

Sales Data Analysis

using numpy for Project
Management Success



INTRODUCTION

"Hi, I'm Muskan. This project titled 'Sales Data Trend Analysis using NumPy' focuses on analyzing sales data to find trends and key insights using Python and NumPy."





Project Goal :-

The goal of this project was to analyze monthly sales data using Numpy to find total average and trend in yearly performance.

Tool used :-

1. Python – Used as the main programming language to perform data analysis and calculations.
2. Numpy Library – Used for handling numerical data, performing array - based operations, and analyzing sales trends efficiently.

Code :

```
users > HP > ⚡ sales project.py > ...
import numpy as np
#step 1 : Create monthly sales data(in thousand rupees)
sales = np.array([45,56,60,75,80,90,65,70,85,95,100,110])

#step 2 : Calculate total and average sales
total_sales = np.sum(sales)
avg_sales = np.mean(sales)

#step 3 : Find the highest and lowest sales
max_sales = np.max(sales)
min_sales = np.min(sales)

#step 4 : Find month numbers for highest & lowest sales
max_month = np.argmax(sales) + 1
min_month = np.argmin(sales) + 1

#Display all results
print("Monthly sales data(in thousand ₹):")
print(sales)
print("-----")
print(f"Total yearly sales: ₹{total_sales * 1000}")
print(f"Average monthly sales : ₹{avg_sales * 1000:.2f}")
print("-----")
print(f"Highest sales : ₹{max_sales * 1000}(month {max_month})")
print(f"Lowest sales : ₹{min_sales * 1000} (month {min_month})")
print("-----")

#step 6 : Simple growth check (compare last 3 vs first 3 months)
first_quarter = np.mean(sales[:3])
last_quarter = np.mean(sales[-3:])

if last_quarter > first_quarter:
    print("Sales increased over the year.")
else:
    print("Sales decreased over the year.")
```





Output:

```
PS C:\Users\HP> python -u "c:\Users\HP\sales project.py"
Monthly sales data(in thousand ₹):
[ 45  56  60  75  80  90  65  70  85  95 100 110]
-----
Total yearly sales: ₹931000
Average monthly sales : ₹77583.33
-----
Highest sales : ₹110000(month 12)
Lowest sales : ₹45000 (month 1)
-----
Sales increased over the year.
PS C:\Users\HP>
```

Key Insights :-

Track Progress

1. The total yearly sales were around ₹ 9.31 lakh .
2. The average monthly sales were approximately ₹ 77,000 .
3. The highest sales occurred in month 12(december) - ₹ 1,10,000 .
4. The lowest sales occurred in month 1(january) - ₹ 45,000 .
5. Comparing first and last quarter data showed a clear positive growth trend – sales improved steadily through the year.



Conclusion :-

- . Using Numpy, we can easily analyze raw sales data and find trends like growth, best-performing months and overall business performance.
- . This simple analysis helps business understand their progress and plan for future growth effectively.

