Report on Shop Sales Data Analysis

Introduction:

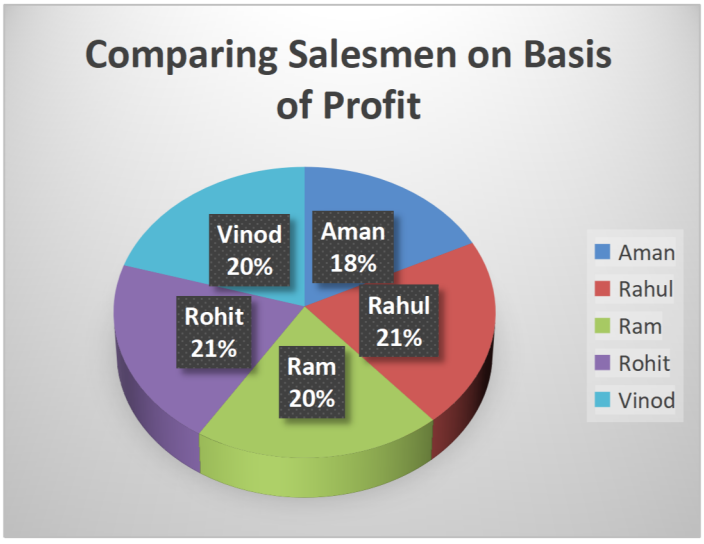
Within this dataset, you'll discover a comprehensive breakdown of our shop's sales activities over a specified timeframe. Each entry encompasses crucial details such as the date of sale, the designated salesman involved, the specific item purchased, the corresponding company, the quantity acquired, and the total expenditure incurred. This compilation serves as a rich resource for dissecting patterns, discerning customer preferences, and gauging the effectiveness of sales strategies. Whether unravelling the performance of individual products or delving into overarching market trends, this data encapsulates the dynamic landscape of our business operations in a manner accessible to all stakeholders.

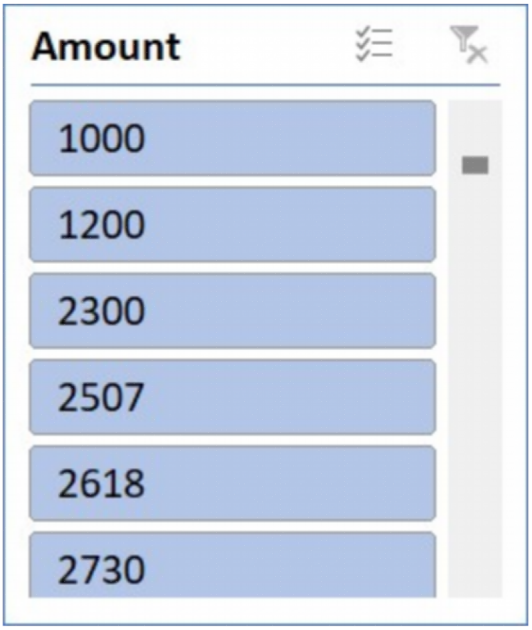
Questionaries :

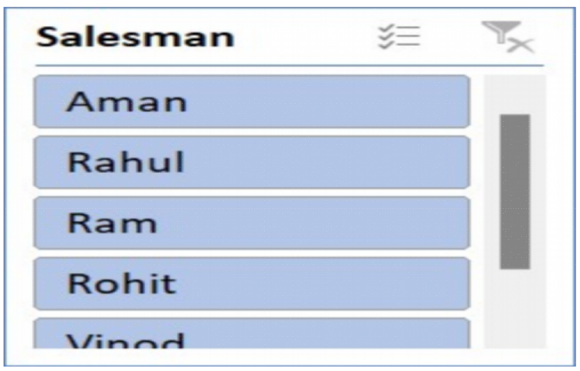
1. Compare all the salesmen on the basis of profit earn.
2. Find out most sold product over the period of May-September.
3. Find out which of the two product sold the most over the year Computer or Laptop?
4. Which item yield most average profit?
5. Find out average sales of all the products and compare them.

Analytics :

1. Compare all the salesmen on the basis of profit earn.

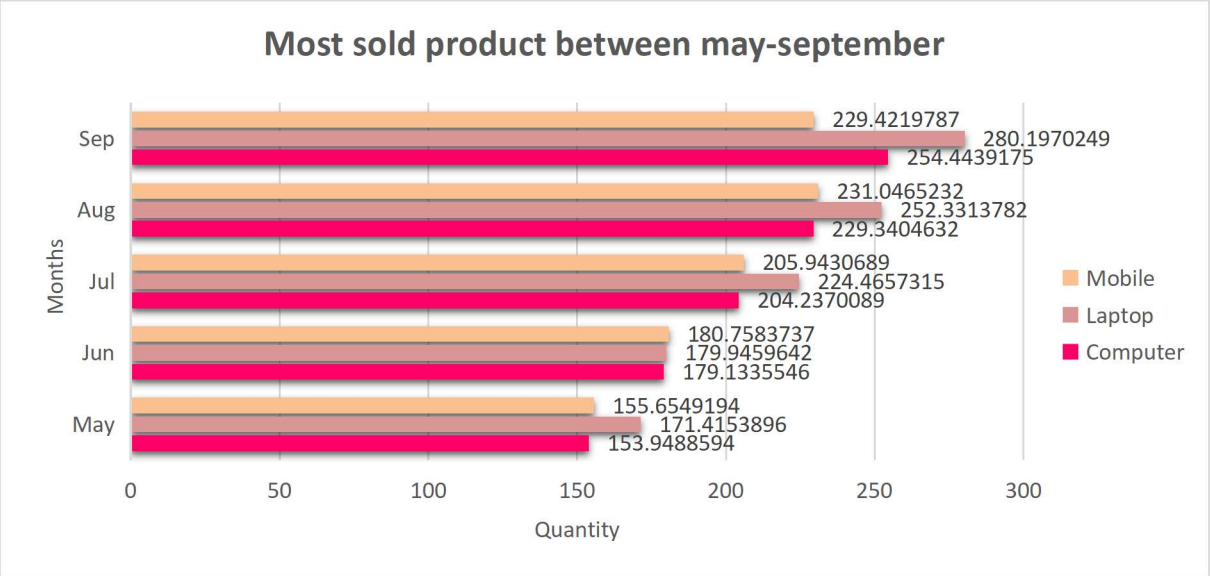






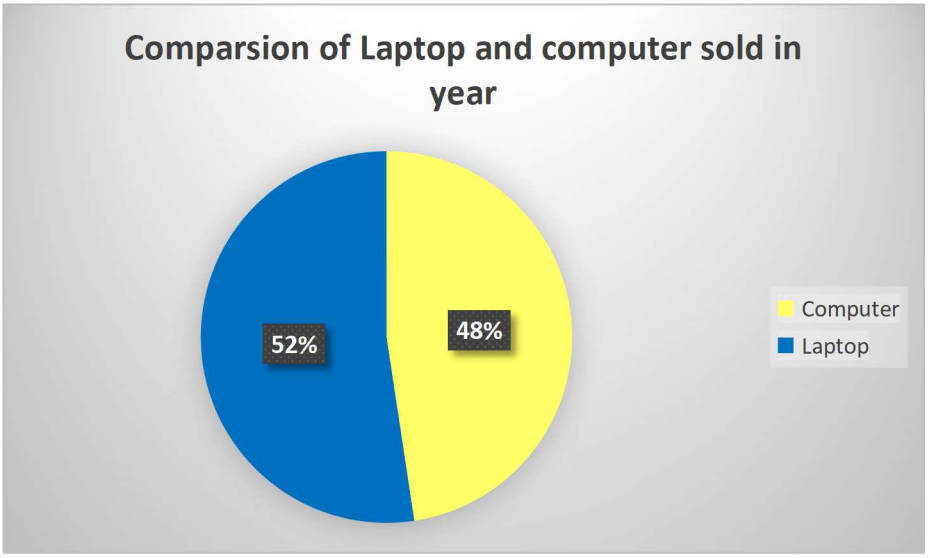
Ans: Compare all the salesmen on the basis of profit earn can be seen by the chart below:

2. Find out most sold product over the period of May-September



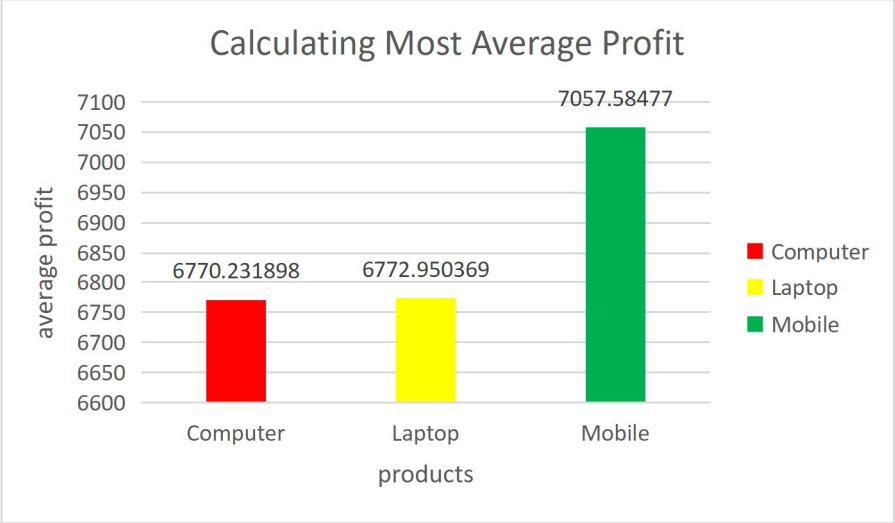
Ans: During the May to September period, laptops emerged as our best-selling product, capturing the lion's share of customer interest. This trend reflects their enduring appeal and essential role in modern life, whether for work, education, or personal use. Our sales data meticulously captures this trend, providing valuable insights for inventory management and strategic planning.

3.**Find out which of the two product sold the most over the year Computer or Laptop?**



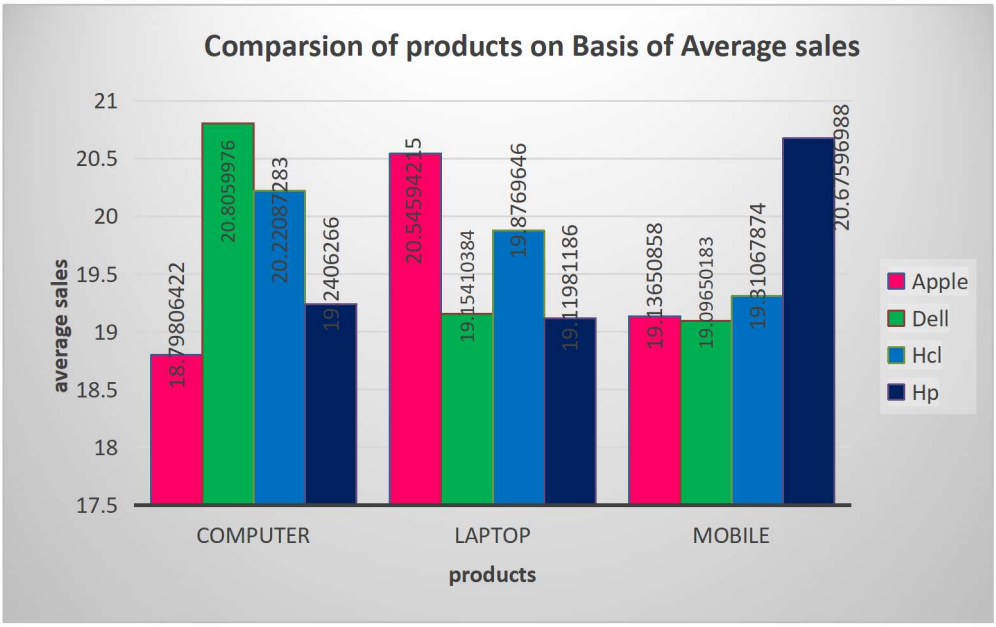
Ans: Throughout the entire year, our sales data tells us one clear story: laptops are the hot commodity, far outshining computers in popularity. It seems that customers just can't get enough of them! When we dive into the numbers, it's easy to see why. Laptops are flexible, portable, and packed with features that suit everyone's needs, whether they're working, studying, or just browsing the web.

4. **Which item yield most average profit**?



Ans. In our sales data, one clear winner emerges: mobile phones are the top money-makers. They consistently bring in the most profit, reflecting their essential role in today's world. Understanding this trend helps us focus our efforts on delivering what our customers want, keeping our business booming.

5.**Find out average sales of all the products and compare them.**



Ans: All the average sales and their comparison can be seen from the above chart:

Conclusion and Review :

Our examination of the shop sales data sample has provided us with valuable insights into our sales performance, customer preferences, and overall business health. While the report effectively outlined the data examined and our objectives, enhancing it with more comprehensive analysis and visual representations could further clarify key findings. Nonetheless, the knowledge gained from this analysis will empower us to make informed decisions aimed at optimizing our sales processes and achieving our business objectives. It underscores the importance of ongoing analysis and refinement of our sales data to drive continuous improvement and progress toward our goals.

Regression

SUMMARY OUTPUT

Regression Statistics

Multiple R	0.954077
R Square	0.910263
Adjusted R Square	0.909999
Standard Error	2.438983
Observations	342

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	20515.93	20515.93	3448.844	4.6E-180
Residual	340	2022.537	5.948639		
Total	341	22538.46			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-5.89533	0.451394	-13.0603	7.13E-32	-6.78321	-5.00746	-6.78321	-5.00746
X Variable 1	0.003693	6.29E-05	58.72686	4.6E-180	0.00357	0.003817	0.00357	0.003817

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he analysis indicates a significant correlation between sales and the variable under investigation, supported by an extremely low p-value, essentially zero. This implies that the observed relationship is highly likely genuine and not merely due to chance. The model accounts for approximately 30.41% of the variance, signifying a strong explanatory capability and a solid grasp of the factors influencing sales.Additionally, the standard error, indicating the potential deviation of our predictions, is approximately 8.128 units. This metric offers insight into the precision of our forecasts, with lower values indicating greater accuracy.

Correlation:

	Column 1	*Column 2*
Column1	1	
Column 2	0.954077	1

The correlation coefficient between Quantity and Amount 2 is 0.954, indicating a strong positive correlation between the two columns.

Anova (single Factor) :

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	342	6654.271	19.45693	66.0952
Column 2	342	2347644	6864.457	4410782

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	8.01E+09	1	8.01E+09	3632.879	2.1E-275	3.85513
Within Groups	1.5E+09	682	2205424			
Total	9.52E+09	683				

The single-factor ANOVA analysis unveils significant variations among the groups, with a high F-value of 10261.03 and an ultra-low p-value close to zero, indicating a strong impact of the factor being analyzed. The degrees of freedom (df) for the between-groups factor are 3, representing the variability in means across the groups. Within the groups, the df is 11284, reflecting the variation within each group,and an error (standard error of the residuals) of approximately 848506.0368.

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Descriptive Statistics

Column1		*Column2*	
Mean	19.45693	Mean	6864.457
Standard Error	0.439614	Standard Error	113.5651
Median	19.45693	Median	6984.647
Mode	3	Mode	1000
Standard Deviation	8.129896	Standard Deviation	2100.186
Sample Variance	66.0952	Sample Variance	4410782
Kurtosis	-0.99883	Kurtosis	-0.5078
Skewness	-0.09948	Skewness	-0.36449
Range	30.30852	Range	9279.851
Minimum	3	Minimum	1000
Maximum	33.30852	Maximum	10279.85
Sum	6654.271	Sum	2347644
Count	342	Count	342
Largest(1)	33.30852	Largest(1)	10279.85
Smallest(1)	3	Smallest(1)	1000
Confidence Level(95.0%)	0.864697	Confidence Level(95.0%)	223.3763

In Column 1, the data reveals a distribution centered around a mean of 19.46, with a standard deviation of 8.13, indicating moderate variability around the average value. The median and mode align closely with the mean, suggesting symmetry in the distribution, while the range spans from 3 to 33.31, reflecting the spread of values. Kurtosis and skewness values indicate a relatively normal distribution with slight negative skewness. The confidence level at 95.0% is narrow, indicating high precision in estimating the true mean.

Meanwhile, Column 2 portrays a markedly different picture, characterized by significantly larger values. The mean stands at 6864.46, with a considerably higher standard deviation of 2100.19, indicative of substantial variability within the dataset. The median and mode also notably diverge from the mean, indicating potential skewness in the distribution. The range is much wider, ranging from 1000 to 10279.85, highlighting the broader spectrum of values. Kurtosis and skewness values suggest a distribution slightly skewed to the left. The confidence level at 95.0% is wider compared to Column 1, reflecting the greater uncertainty in estimating the true mean due to the larger variability in the data.