KUMARAGURU
college of technology
character is life

B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Sixth Semester

INFORMATION TECHNOLOGY

U18ITE0003: Data Visualization

COURSE OUTCOMES

CO1: Explain principles of visual perception.

CO2: Apply core skills for visual analysis.

CO3: Explain visualization for time-series analysis and ranking analysis.

CO4: Outline visualization for deviation, distribution, correlation and multivariate analysis.

CO5: Demonstrate the skills in information dashboard design.

**Time: Three Hours**   **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Explain about the three main uses of data visualization.	CO1	[K2]
2.	List the facts of creating effective visualization.	CO1	[K2]
3	Draw a stem and leaf plot for the following list of items. 71, 43, 65, 76, 98, 82, 95, 83, 84, 96.	CO2	[K3]
4	Write down any four data visualization tools.	CO2	[K3]
5	What is bump chart? Give an example.	CO3	[K3]
6.	What is an outlier?	CO3	[K2]
7.	What do you mean by deviation analysis?	CO4	[K2]
8.	What are the key characteristics of correlation analysis?	CO4	[K2]
9.	What are the three different types of memory? In which memory pre-attending processing occurs?	CO5	[K2]
10.	What do you mean by data-ink ratio?	CO5	[K2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	List and explain various visualization attributes.	8	CO1	[K2]
	b)	List and explain various analytical techniques that can improve the effectiveness of visual analysis.	8	CO1	[K2]

12. a) Write the critique about the following dashboard   8   CO2   [K3]
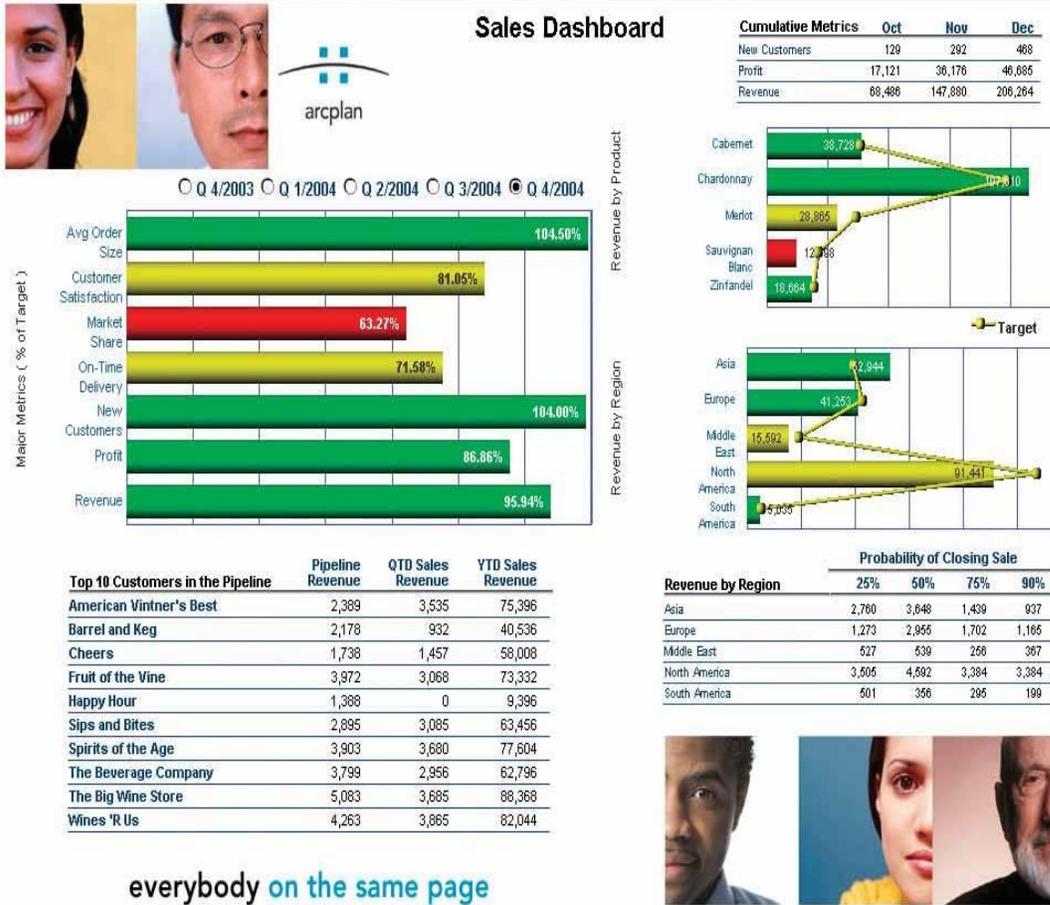
b) What is box plot? Construct a box plot for the following data. Mention median, lower quartile and upper quartile.   8   CO2   [K3]

1. 59, 60, 61, 62, 62, 63, 63, 64, 64, 64, 65, 65, 65, 65, 65, 65, 65, 65, 65, 66, 66, 67, 67, 68, 68, 69, 70, 70, 70, 70, 70, 71, 71, 72, 72, 73, 74, 74, 75, 77
2. 1, 1, 2, 2, 4, 6, 6.8, 7.2, 8, 8.3, 9, 10, 10, 11.5

13. a) Explain in detail about various displays used in time series analysis.   8   CO3   [K2]

b) Explain in details about part to-whole and ranking techniques. Discuss its best practices.   8   CO3   [K2]

14. a) List and explain the various displays used in the distribution analysis.   8   CO4   [K2]

b) What does correlation tell us about two variables? Explain in detail about the various patterns available in correlation analysis?   8   CO4   [K2]

15. a) How dashboards are classified based on the role? Explain three different roles of dashboards in detail.   8   CO5   [K2]

b) Explain in detail about gestalt principles of visual perception.   8   CO5   [K2]

16. a) List and explain the various displays used in the multivariate analysis.   8   CO4   [K2]

b) Explain about the purpose of using a dashboard for data visualization? Design a dashboard for any one example scenario.   8   CO5   [K3]

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