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Total No. of Questions : 17

Total No. of Pages : 03

MBA (Sem.–4)
DATA VISUALIZATION FOR MANAGERS
Subject Code : MBA-963-18
M.Code : 78031
Date of Examination : 19-05-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A contains EIGHT questions carrying TWO marks each and students has to attempt ALL questions.

2. SECTIONS-B consists of FOUR Subsections : Units-I, II, III & IV. Each Subsection contains TWO questions each carrying EIGHT marks each and students have to attempt any ONE question from each Subsection.

3. SECTION-C is COMPULSORY and consists of ONE Case Study carrying TWELVE marks.

SECTION-A

Write briefly :

1. What are the applications of bar charts?

2. What is data .visualization?

3. What is ETL?

4. What is Staging Layer?

5. What is meant by KPI?

6. What is a Dashboard?

7. What is a Storyboard?

8. What is a Star Schema?

SECTION-B

UNIT-I

9. Discuss in detail the history of Data Visualization. Also, discuss the current scope of Data Visualization.

10. Write notes on :

   a) Data Reduction

   b) Common Visualization Idioms.

UNIT-II

11. Discuss various interactive visualization features. Explain by citing examples.

12. Write short notes on :

   a) Difference between ETL and ELT

   b) Need for data integration.

UNIT-III

13. Discuss the role of relevance of KPI's in data visualization. Explain by citing examples.

14. Discuss the Shaffer 4 C's of data visualization in detail by citing a relevant example.

UNIT-IV

15. Discuss the role and relevance of storytelling in Data Visualization. Explain by citing examples.

16. Write notes on :

   a) How to choose an effective visual tool?

   b) Applications of Info graphics.

SECTION-C

17. **Case Study :**

Visualization is the use of computer-supported visual representation of data. Unlike static data visualization, interactive data visualization allows users to specify the format used in displaying data. Common visualization techniques are charts. It is important to understand which chart or graph to use for your data. Data visualization uses computer graphics to show patterns, trends, and relationships among elements of the data. It can generate pie charts, bar charts, scatter plots, and other types of data graphs with simple pull-down menus and mouse clicks. Colors are carefully selected for certain types of Visualization. When color is used to represent data, we must choose effective colors to differentiate between data elements. In data visualization, data is abstracted and summarized. Spatial variables such as position, size, and shape represent key elements in the data. A visualization system should perform a data reduction, transform and project the original dataset on a screen.

Applications of Visualization - Most visualization designs are to aid decision-making and serve as tools that augment cognition. In designing and building a data visualization prototype, one must be guided by how the Visualization will be applied. Data

visualization is more than just representing numbers; it involves selecting and rethinking the numbers on which the Visualization is based. Visualization of data is an important branch of computer science and has a wide range of application areas. Several application-specific tools have been developed to analyze individual datasets in many fields of Medicine and science.

a. **Public Health:** The ability to analyze and present data in an understandable manner is critical to the success of public health surveillance. Health researchers need useful and intelligent tools to aid their work. Security is important in cloud-based medical data visualizations. Open any medical or health magazine today, and you will see all kinds of graphical representations.

b. **Renewal Energy:** Calculation of energy consumption compared to production is important for an optimum solution.

c. **Environmental Science:** As environmental managers are required to make decisions based on highly complex data, they require Visualization. Visualization applications within applied environmental research are beginning to emerge. It is desirable to have at one's disposal different programs for displaying results.

d. **Fraud Detection:** Data visualization is important in the early stages of fraud investigation. Fraud investigators may use data visualization as a proactive detection approach to see patterns that suggest fraudulent activity.

e. **Library-Decision Making:** Data visualization software allows librarians the flexibility to better manage and present information collected from different sources. It gives them the skill to present information creatively and compellingly. Visualization of library data highlights purchasing decisions, future library needs and goals. Librarians, as de facto experts in data visualization, can assist students, faculty and researchers in visualizing their data.

Case Study Questions :

a) *"It is important to understand which chart or graph to use for your data"*. Comment on this statement

b) *"Data visualization is more than just representing numbers"*. Comment on this statement.

c) Discuss the various application of data visualization.