

Class-VIII
Chapter-3
Data Visualisation

Exercise

Objective type questions:

1. Which of the following is used as a visualisation technique?

Answer d. All of the above

2. Which of the following statement is correct?

Answer a. Data visualisation presents information quickly

3. Which of the following field is a use case of applying data visualisation?

Answer d. All of the above .

4. Which of the following formats of data is easier to analyse?

Answer a. Tabular data

5. Which of the following visualisation is best for showing a relation between two variables?

Answer a. Scatter plot

6. Which of the following statements is incorrect?

Answer c. Data visualisation decreases the insights and take slower decisions

7. Which of the following is a best practice for selecting an appropriate data visualisation technique?

Answer a. Collect, organize and analyse

8. Which of the following is an advantage of data visualization?

Answer (a) It can be accessed quickly by a wider audience.

9. Which of the following is a demerit of using data visualization?

Answer (c) Lot of visual data may get distorted or excessively used.

10. Which of the following is the most basic and commonly used technique in data visualization?

Answer (a) Line charts

11. Which of following is a part of regression analysis technique in data visualization?

Answer: (c) Both a and b

12. Which of the following techniques is advisable for statistical analysis to support in decision making?

Answer: (d) All of the above

13. Which of the following qualities of data are to be tested before using in analysis?

Answer: (d) All of above

B. State whether these statements are True or False.

1. Data visualization is used to present data or information graphically or by pictures.

Answer: True

2. A column chart is usually used to show the change of information over a period of time.

Answer: False

3. Area charts are generally used to display absolute or relative (stacked) values over a period.

Answer: True

4. Line charts provide efficient methods using bars of different heights.

Answer: False

Short answer type question

1. What is histogram?

A histogram is a graph that shows the frequency of values within specific ranges (called bins) It helps to see how data is distributed.

Histogram has following parts or elements:

1. **Title** – Explains what the histogram is about.
2. **X-axis (Horizontal axis)** – Shows the intervals or bins (ranges of data).
3. **Y-axis (Vertical axis)** – Shows the frequency (how many values fall in each range).
4. **Bars/Rectangles** – Represent the frequency of data within each interval.

2. What is regression?

Regression literally means state of returning to original value. Regression predicts values on the basis of past trends. For example, a regression algorithm can predict what will be the next day's temperature by looking at the temperatures of last few days.

3. What is the use of frequency distribution tables?

Frequency distribution tables are made to show how often a group of data points appear in a given data set of observations. They help in organizing raw data into a clear and understandable form.

Answer the questions below in no less than 100 words.

1. Narrate the steps to be taken to make sure that the correct data is collected for analysis.

Answer:

There are three steps to make sure that the correct data is collected

1. Quality of Data

When collecting data from different sources, always check its quality. Poor-quality data can cause errors in the dataset. It is important to collect good data from the right sources.

2. Completeness of Data

Collect data from sources that have full information, including all observations, values, and trends.

3. Format of Data

Data should be in a proper format so that it can be easily processed digitally. For multimedia, files like pictures and audio should be in usable and royalty-free formats.

2. What are statistical techniques to be used for data analysis?

Answer:

There are three statistical techniques for data analysing:

- **Regression analysis:**

Regression literally means state of returning to original value. Regression predicts values on the basis of past trends.

- **Cohort analysis**

A cohort is a group of users (forum) experiencing a common product, event or service within the same time period.

- **Predictive analysis**

Predictive analysis is the use of data, statistics, and computer techniques to find patterns and make future predictions. It helps organizations understand, forecast, and improve their business performance.

3. What are the three most important analytical techniques for finding a right type of customer?

Answer:

The three most important analytical techniques for identifying the right type of customer are:

1. **Supplier or Manufacturer Analysis** – Finding out who supplies or makes the product.
2. **Customer Analysis** – Identifying the entity that purchases the product.
3. **End User Analysis** – Understanding the actual user of the product, as they determine the real experience and satisfaction.