

ASSIGNMENT

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1. Evaluate the relevance of Visual Analysis in Big Data Analytics. Which type of data analysis will you prefer in the scenario of Covid-19 Pandemic.

Visual analytics is the use of sophisticated tools and processes to analyze datasets using visual representations of the data. Visualizing the data in graphs, charts, and maps helps users identify patterns and thereby develop actionable insights. These insights help organizations make better, data-driven decisions. The importance of Data visualization is – analyzing complex data, identifying patterns, and extracting valuable insights. Simplifying complex information and presenting it visually enables decision-makers to make informed and effective decisions quickly and accurately.

Data visualization is essential to assist businesses in quickly identifying data trends, which would otherwise be a hassle. The pictorial representation of data sets allows analysts to visualize concepts and new patterns. With the increasing surge in data every day, making sense of the quintillion bytes of data is impossible without Data Proliferation, which includes data visualization.

- Share findings and track progress: Interactive reports and dashboards help users track, organize and share key performance indicators across an organization.
- Make faster decisions: Users can understand data insights much more quickly by seeing and working with data sets when they are in a visual format.
- Explore data more easily: Self-service analytics tools which allow users to interact with data in a visual context allows them to discover hidden relationships and patterns in the data without relying on help from IT.
- Promote data literacy: Making data easier to work with and understand democratizes data analytics, getting more people across an organization involved.
- Analyzing reports helps business stakeholders focus on the areas that require attention. The visual mediums help analysts understand the key points needed for their business. Whether it is a sales report or a marketing strategy, a visual representation of data helps companies increase their profits through better analysis and better business decisions.
- Humans process visuals better than any tedious tabular forms or reports. If the data communicates well, decision-makers can quickly take action based on the new data insights, accelerating decision-making, and business growth simultaneously.
- Data visualization allows business users to gain insight into their vast amounts of data. It benefits them to recognize new patterns and errors in the data. Making sense of these patterns helps the users pay attention to areas that indicate red flags or progress. This process, in turn, drives the business ahead.
- Data visualization strengthens the impact of messaging for your audiences and presents the data analysis results in the most persuasive manner. It unifies the messaging systems across all the groups and fields within the organization.
- Visualization lets you comprehend vast amounts of data at a glance and in a better way. It helps to understand the data better to measure its impact on the business and communicates the insight visually to internal and external audiences.
- ☐ Decisions can't be made in a vacuum. Available data and insights enable decision-makers to aid decision analysis. Unbiased data without inaccuracies allows access to the right kind of information and visualization to represent that information and keep it relevant.

In the scenario of the Covid-19 pandemic, visual analysis can be particularly useful for monitoring and tracking the spread of the virus, identifying hotspots, and evaluating the effectiveness of interventions. For example, we can use interactive dashboards and maps to

display real-time data on the number of cases, deaths, and hospitalizations, broken down by location, age, and other demographic factors. These visualizations can help policymakers and healthcare professionals make informed decisions about resource allocation, contact tracing, and testing strategies.

One type of data analysis that might be particularly useful in the scenario of the Covid-19 pandemic is predictive modelling. Predictive modelling involves using statistical and machine learning techniques to analyse historical data and make predictions about future events. For example, we can use predictive modelling to forecast the number of cases and deaths in different regions, based on factors such as population density, mobility, and social distancing measures. These predictions can help policymakers and healthcare professionals prepare for potential surges in demand for healthcare services and allocate resources accordingly. In addition to predictive modelling, other types of data analysis that can be useful in the context of the Covid-19 pandemic include descriptive statistics, hypothesis testing, and data mining. Descriptive statistics can help us summarize and visualize the key features of the data, such as the mean, median, and standard deviation of the number of cases and deaths. Hypothesis testing can help us evaluate the significance of differences between groups or interventions, such as comparing the effectiveness of different vaccines or treatments. Data mining techniques, such as clustering and association rule mining, can help us identify patterns and relationships in the data that might not be apparent through visual inspection or traditional statistical methods.

2. Evaluate and explain the role of sentiment analysis in choosing the winner of a contest. Compare it with any other Analysis techniques

Sentiment analysis is a valuable tool for choosing the winner of a contest, as it enables the analysis of large volumes of social media data to gain insights into the sentiment and opinions of the audience. By analyzing the sentiment of the audience, we can gain insights into their preferences, opinions, and attitudes towards the contest entries, which can inform the selection of the winner. — For example, in a singing contest, sentiment analysis can be used to analyze social media data such as tweets, posts, and comments to understand the audience's sentiment towards each of the contestants. The sentiment analysis can identify the positive and negative sentiment associated with each contestant, which can help judges or organizers make informed decisions about the winner.

Other analysis techniques that can be used in selecting the winner of a contest include text analytics, data mining, and predictive modeling. Text analytics involves the analysis of unstructured data such as text, which can be used to identify themes, patterns, and insights that may not be apparent through manual analysis. Data mining involves the use of statistical techniques to analyze large datasets and identify patterns and relationships between variables. Predictive modeling involves using statistical algorithms to make predictions based on historical data. — Compared to other analysis techniques, sentiment analysis has the advantage of being able to analyze social media data in real-time, enabling organizers to make informed decisions based on current sentiment trends. Sentiment analysis can also be a more accessible and user-friendly technique for nontechnical stakeholders, such as judges or organizers, who may not have the expertise to perform more advanced analysis techniques. However, other techniques such as data mining or predictive modeling may provide more robust insights and predictions based on historical data, which can be useful in selecting the winner of a contest.