

Summer Holiday Homework For the Session: 2026-27

Subject: Artificial Intelligence – 417

Class: IX

- Visit this link: <https://datavizcatalogue.com/>
- On this website, you will find various types of graphical representations/data visualization techniques.
- Out of these, list down any **TEN** graphical representations/data visualization techniques in the below format for all.

Data Visualization Technique 1	
• Name of the representation	
• One-line description	
• How to draw it?	
• Suitable for which data type?	

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Study the case given below carefully, and answer the below two case-based questions

Case Study

A company aimed to support hospitals in optimizing patient care by creating an AI algorithm designed to identify individuals at high risk. The objective was to provide healthcare providers with valuable insights to allocate resources effectively and ensure those most in need receive appropriate attention. However, potential unintended consequences lead to some problems in the model, such as the algorithm inadvertently exacerbating existing biases or inaccuracies in the data, potentially leading to misclassification of patients or overlooking critical cases. Addressing concerns about the algorithm's accuracy and reliability becomes paramount, as any flaws in its design or training data could compromise patient care and outcomes

The problem it caused:

- Patients from the Western region of a particular area, who were categorized at the same risk level by the algorithm, generally exhibited more severe health conditions compared to patients from other regions.

Why the problem happened:

- The algorithm utilized was trained on healthcare expense data as a measure for health metrics rather than actual physical illness.
- This algorithm was created in the United States where less money is spent on western region patient healthcare than other ethnic patient healthcare.

Case-Based Question 1.

In a corporate setting, a multinational company is facing scrutiny over its environmental practices, particularly regarding the disposal of industrial waste. The company has historically prioritized profit maximization and cost-cutting measures, leading to practices that result in environmental harm and negative impacts on local communities. As public awareness and concern about environmental sustainability grow, stakeholders, including investors, customers, and advocacy groups, are calling for the company to adopt more responsible and sustainable business practices.

Question:

- Drawing from the case presented, analyze the ethical considerations surrounding the company's environmental practices through the lens of value-based frameworks in ethics.

Case-Based Question 2.

In a rural farming community, a group of small-scale farmers is faced with a dilemma regarding the use of pesticides on their crops. The farmers have traditionally relied on chemical pesticides to control pests and maximize crop yields. However, concerns have been raised about the potential environmental and health impacts of pesticide use, including soil contamination, water pollution, and adverse effects on human health. Additionally, neighboring communities and environmental advocacy groups have expressed opposition to the widespread use of pesticides, citing ecological damage and risks to biodiversity.

Question:

- Using the case provided, examines the ethical considerations surrounding pesticide use in the agricultural sector, applying ethical frameworks to analyze the competing interests and values at stake.
