**Self Reflection:**

# Consider this scenario:

# What are the examples of fair or unfair practices?

# How could a data analyst correct the unfair practices?

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### **Case Study #1**

# To improve the effectiveness of its teaching staff, the administration of a high school offered the opportunity for all teachers to participate in a workshop. They were not required to attend; instead, the administration encouraged teachers to sign up. Of the 43 teachers on staff, 19 chose to take the workshop.

# At the end of the academic year, the administration collected data on teacher performance for all teachers on staff. The data was collected via student survey. In the survey, students were asked to rank each teacher's effectiveness on a scale of 1 (very poor) to 6 (very good).

# The administration compared data on teachers who attended the workshop to data on teachers who did not. The comparison revealed that teachers who attended the workshop had an average score of 4.95, while teachers who did not attend had an average score of 4.22. The administration concluded that the workshop was a success.

Response:

*It is an example of unfair practice, since the workshop was not compulsory for every teacher to attend, it says that they were not required to attend, then how can the administration comment about it being a success or not.*

*They could take the feedback from students about the teachers whether there were changes in behavioral patterns or teaching patterns of a teacher and whether they liked it or not.*

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### **Case Study #2**

# An automotive company tests the driving capabilities of its self-driving car prototype. They carry out the tests on various types of roadways—specifically, a race track, trail track, and dirt road.

# The researchers only test the prototype during the daytime. They collect two types of data: sensor data from the car during the drives and video data of the drives from cameras on the car.

# They review the data after the initial tests. The results illustrate that the new self-driving car meets the performance standards across each of the roadways. As a result, the car can progress to the next phase of testing, which will include driving in various weather conditions.

Response:

*Yes it is a case of unfair practice, the data collected by both the sensors is of day time only and the autonomous vehicle has no experience of roads in night time.*

*They'll have to recollect the day for night time and then if it's up to performance standards then they can send the car for the next phase of testing.*

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### **Case Study #3**

An amusement park plans to add new rides to their property. First, they need to determine what kinds of new rides visitors want the park to build. In order to understand their visitors’ interests, the park develops a survey.

They decide to distribute the survey near the roller coasters because the lines are long enough that visitors will have time to answer all of the questions. After collecting this survey data, they find that most of the respondents want more roller coasters at the park. They conclude that they should add more roller coasters, as most of their visitors prefer them.

*Response:*

*It's an unfair practice, since the survey was conducted near the roller coaster site most of the opinions are biased in favor of a new roller coaster ride.*

*What they should do it, not letting people take the survey near a ride, it could influence their decision. Therefore the best practice would be to take survey at entrance and exit of the park.*

A

**Analytical skills:** Qualities and characteristics associated with using facts to solve problems

**Analytical thinking:** The process of identifying and defining a problem, then solving it by using data in an organized, step-by-step manner

**Attribute**: A characteristic or quality of data used to label a column in a table

B

**Business task:** The question or problem data analysis resolves for a business

C

**Context:** The condition in which something exists or happens

D

**Data:** A collection of facts

**Data analysis:** The collection, transformation, and organization of data in order to draw conclusions, make predictions, and drive informed decision-making

**Data analyst:** Someone who collects, transforms, and organizes data in order to draw conclusions, make predictions, and drive informed decision-making

**Data analytics:** The science of data

**Data design:** How information is organized

**Data-driven decision-making:** Using facts to guide business strategy

**Data ecosystem:** The various elements that interact with one another in order to produce, manage, store, organize, analyze, and share data

**Data science:** A field of study that uses raw data to createnew ways of modeling and understanding the unknown

**Data strategy:** The management of the people, processes, and tools used in data analysis

**Data visualization:** The graphical representation of data

**Database:** A collection of data stored in a computer system

**Dataset:** A collection of data that can be manipulated or analyzed as one unit

F

**Fairness:** A quality of data analysis that does not create or reinforce bias

**Formula:** A set of instructions used to perform a calculation using the data in a spreadsheet

**Function:** A preset command that automatically performs a specified process or task using the data in a spreadsheet

G

**Gap analysis:** A method for examining and evaluating the current state of a process in order to identify opportunities for improvement in the future

O

**Observation:** The attributes that describe a piece of data contained in a row of a table

Q

**Query:** A request for data or information from a database

**Query language:** A computer programming language used to communicate with a database

R

**Root cause:** The reason why a problem occurs

S

**Stakeholders:** People who invest time and resources into a project and are interested in its outcome

T

**Technical mindset:** The ability to break things down into smaller steps or pieces and work with them in an orderly and logical way

V

**Visualization:** (Refer to data visualization)