Module 4

\# <u>Issue:</u> A topic or subject to investigate

\# <u>Question:</u> Designed to discover information

\# <u>Problem:</u> An obstacle or complication that needs to be worked out.

\# <u>Business Task:</u> The question or problem data analysis answers for a business

\# <u>Data-driven Decision-making:</u> Facts discovered through data analysis are used to guide business strategy.

⊛ <u>FAIRNESS IN DATA ANALYSIS</u>

↳ ensuring that your data analysis doesn't create or reinforce bias

↳ consider fairness:

- Consider all of the available data
- Identify surrounding factors
- Include self-reported data
- Use oversampling effectively
- Think about fairness from beginning to end

OVERSAMPLING
Process of increasing sample size of non dominant groups in a population

SELF-REPORTING
Data collection technique where participants provide information about themselves

<u>IMP THINGS TO CONSIDER IN DATA ETHICS</u>

"Are the people represented in this data going to be benefited by this?"

① Data are people
② Keep aspects of their data protected & private

↳ actionable ways to ensure this part of the process

- Business analyst—analyzes data to help businesses improve processes, products, or services

- Data analytics consultant—analyzes the systems and models for using data

- Data engineer—prepares and integrates data from different sources for analytical use

- Data scientist—uses expert skills in technology and social science to find trends through data analysis

- Data specialist—organizes or converts data for use in databases or software systems

- Operations analyst—analyzes data to assess the performance of business operations and workflows

	Data Analysts	Data Scientists	Data Specialists
Problem solving	Use existing tools and methods to solve problems with existing types of data	Invent new tools and models, ask open-ended questions, and collect new types of data	Use in-depth knowledge of databases as a tool to solve problems and manage data
Analysis	Analyze collected data to help stakeholders make better decisions	Analyze and interpret complex data to make business predictions	Organize large volumes of data for use in data analytics or business operations
Other relevant skills	• Database queries • Data visualization • Dashboards • Reports • Spreadsheets	• Advanced statistics • Machine learning • Deep learning • Data optimization • Programming	• Data manipulation • Information security • Data models • Scalability of data • Disaster recovery

Other industry-specific specialist positions that you might come across in your data analyst job search include:

- Marketing analyst—analyzes market conditions to assess the potential sales of products and services

- HR/payroll analyst—analyzes payroll data for inefficiencies and errors

- Financial analyst—analyzes financial status by collecting, monitoring, and reviewing data

- Risk analyst—analyzes financial documents, economic conditions, and client data to help companies determine the level of risk involved in making a particular business decision

- Healthcare analyst—analyzes medical data to improve the business aspect of hospitals and medical facilities