DATA ANALYSIS PHASES

1 **ASK**

Focus on the problem
Talk to stakeholders
See the situation in context

2 **PREPARE**

What metrics to measure
Locate the data

3 **PROCESS**

Clean data
Check for bias or incorrect data

4 **ANALYZE**

Perform calculations
Create tables witchresults
How will my data help me solve my problem?

5 **SHARE**

Make decisions
Communicate your findings
Visualization

6 **ACT**

Provide recommendations based on what was discovered

Common Problem Types

1. **Make predictions**
   - use data to predict what may happen in the future

2. **Categorizing things**
   - assigning information to different groups based on common features

3. **Spoting something unusual**
   - identify data that is different from the norm

4. **Identifying themes**
   - groups information into broaden concepts

5. **Discovering connections**
   - find similar challenges faced by different entities and then combine data and insights to address them

6. **Find Patterns**
   - analyze patterns by using historical data to understand what happened in the past and may happen again.

S pecific → specific and significant
M easurable → quantified
A ction - oriented → encourage change
R elevant → important questions
T ime - bound → specify the time to study

How to make highly effective questions
+
make fairness questions
↳ don't make assumptions

DONT'S

- vague questions
- closed - ended questions (yes or no)
- leading questions

Project: on budget home lab
Overall business goal: buy the best cost efficiency server
Data sources: internet and reviews

Questions:

- What kind of data do you use to get information about the servers?
- How many server options are you analyzing right now?
- What could make you make a decision about which one to buy?
- What is the maximum amount of time you are willing to wait before making a decision?
- Can you order these factors from most to least important for you choice: server price, server reliability, server power, famous brand pieces

- Quantitative data: things you can measure
  - ex: amount of money spent, time, etc
- Qualitative data: things that can't be measured
  - ex: color, favorite food, etc.

REPORT	DASHBOARD
- static data	- dynamic, live data
- historical data	- low mantainence
- send periodically	- can be confusing
- Pre-clean data	- need to be designed first
- need more mantainence	

Types of Dashboards

- strategic → long term goals, hignst level of metrics
- Operational → short term tracking
- Analytical → contain details used by the data analysts

SMALL DATA	x	BIG DATA
- short time period		- long time period
- simple to use, collect		- broken in smaller pieces
- spreadsheets		- SQL

STRUCTURED THINKING

- recognizing the problem, and identifying options

PROBLEM DOMAIN

- The area of analysis
- Everything affected by the problem

SCOPE OF WORK

- The work you gonna be performing

- Deliverables → what will be delivered as a result of the project in the end
- Milestones → determines when a part of the project is completed
- Reports → what and how often you will communicate with stakeholders, what info you will communicate
- Timeline → map how long each step of the project should take

CONTEXT

- Who
- what
- where
- when
- why
- How

Questions used to contextualize data