

# Why data literacy is an essential skill

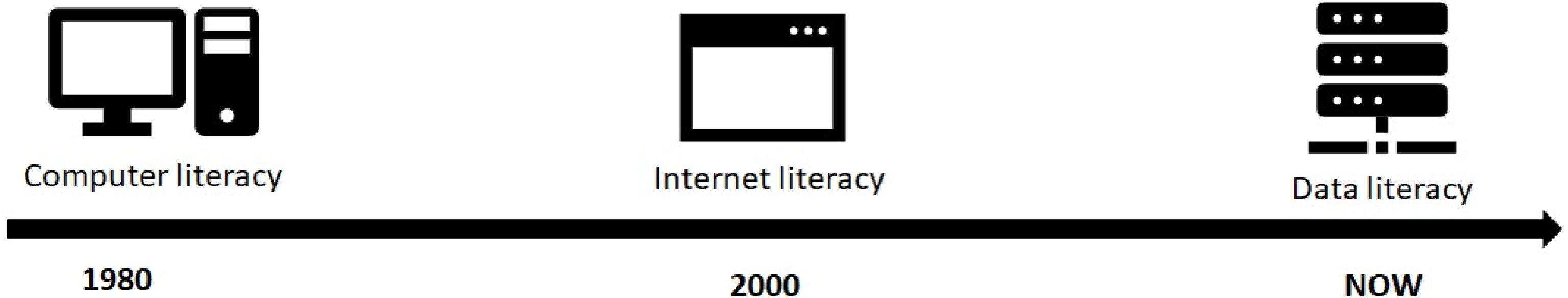
INTRODUCTION TO DATA LITERACY



**Jess Ahmet**

Content Developer, DataCamp

# We live in the data era



# Data literacy is a life skill

- We can learn about the world through data
- Problem: lots of information, often complex
- How do we get from information to valuable insights?

*Data literacy can help us learn how data can be used to connect the dots and create value*



# A skill even for non-data jobs

- Data literacy is **not** about technical skill
- It **is** about learning how to critically think about and interact with data and its analysis
  - Understanding its relevance
  - Placing it into context
  - Knowing both its potential and its limits

# The definition of data literacy

- The ability to read, work with, analyze, and communicate insights with data.
- Reading data
- Working with and analyzing data
- Communicating insights with data

# Reading data

- Identify data sources
- Collect data
- Manage data
- Tools you might already know:
  - Databases
- Learn more in Chapter 2



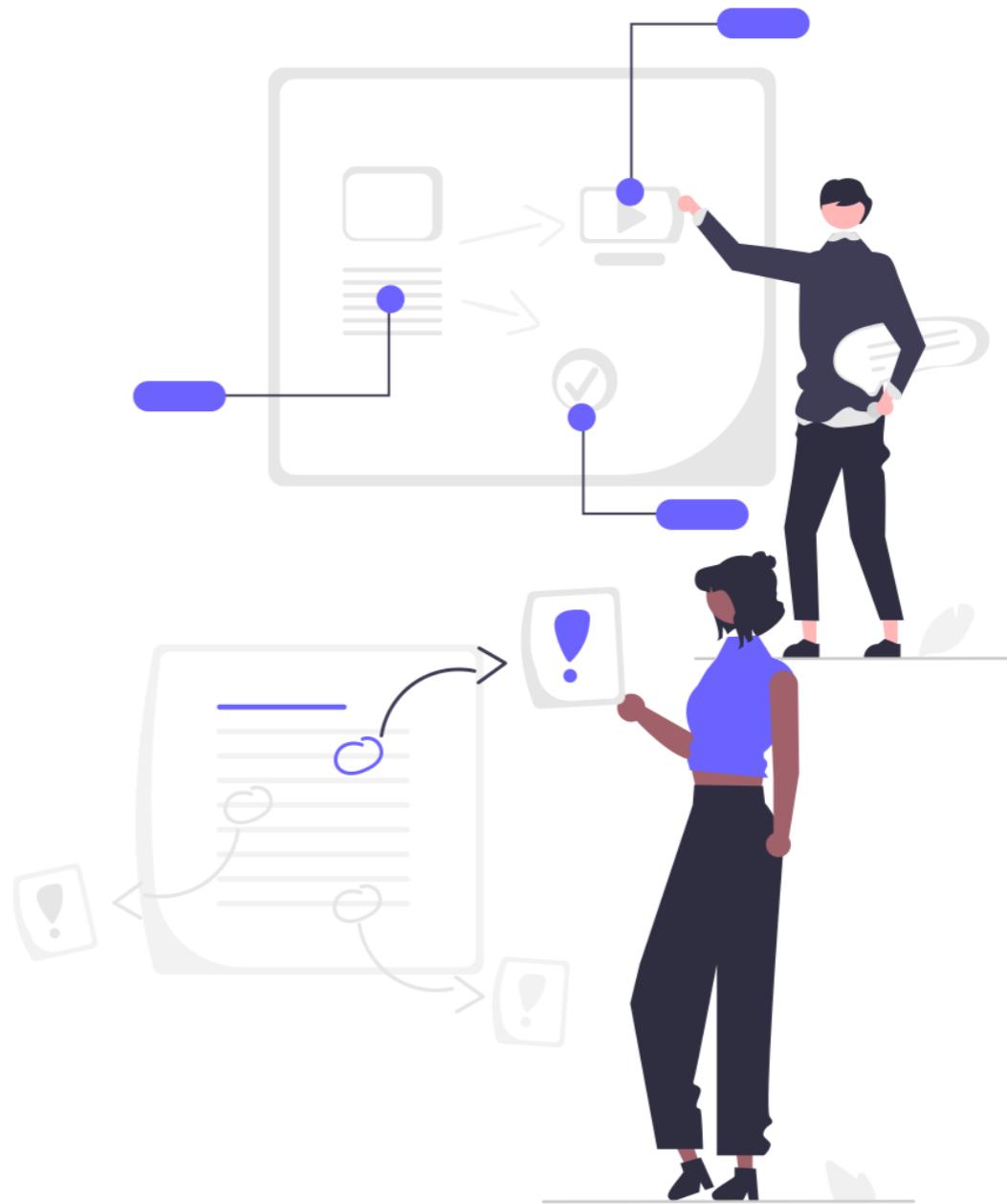
# Working with and analyzing data

- Turn data into insights
- Data analytics:
  - Descriptive analytics
  - Predictive analytics
- Learn more in Chapter 3



# Communicating insights with data

- Demonstrate your insights
- Present possible actions
- Tools you might already know:
  - Visualizations
  - Storytelling
- Learn more in Chapter 4



# **Let's practice!**

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# From data to insights

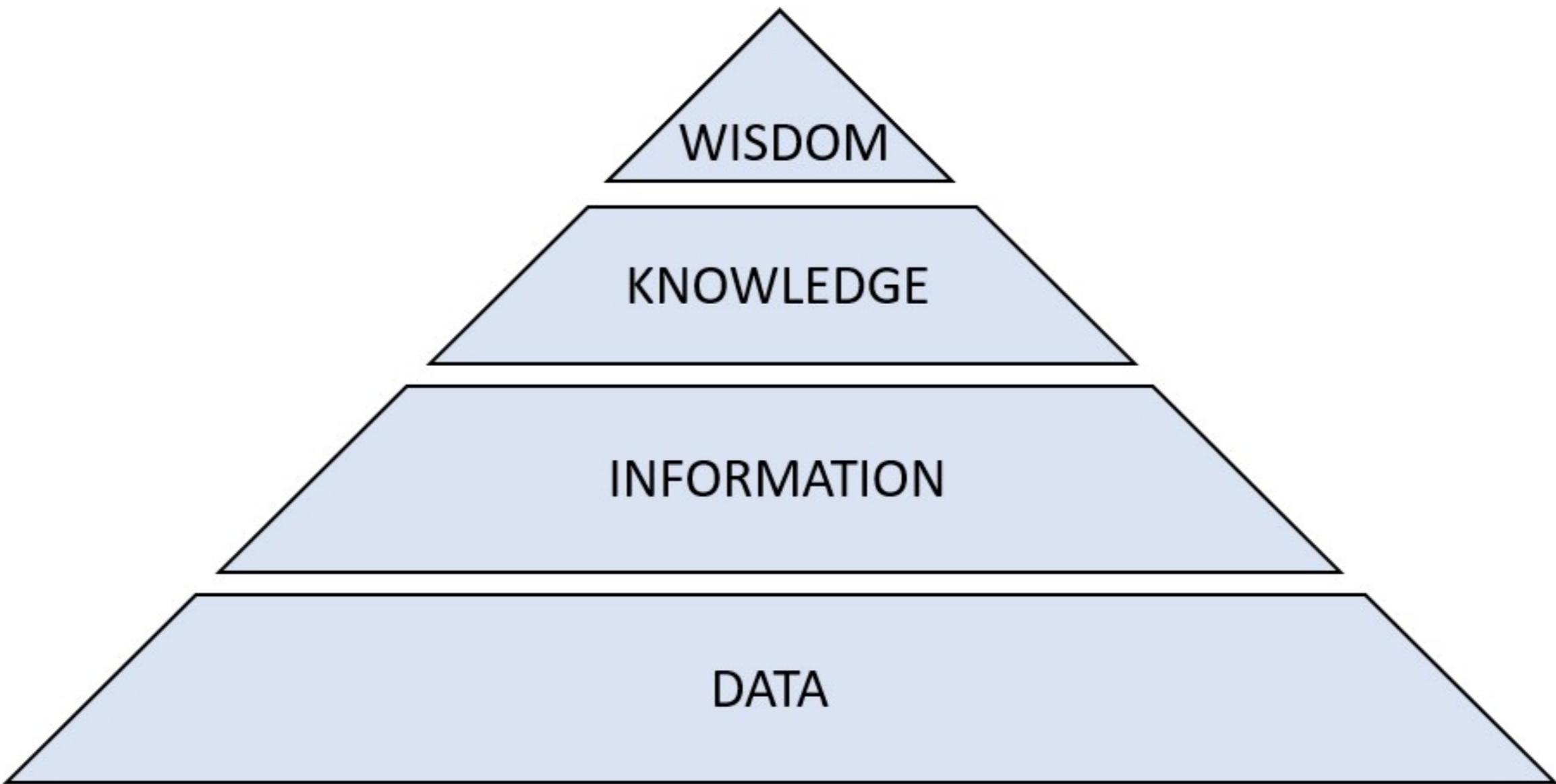
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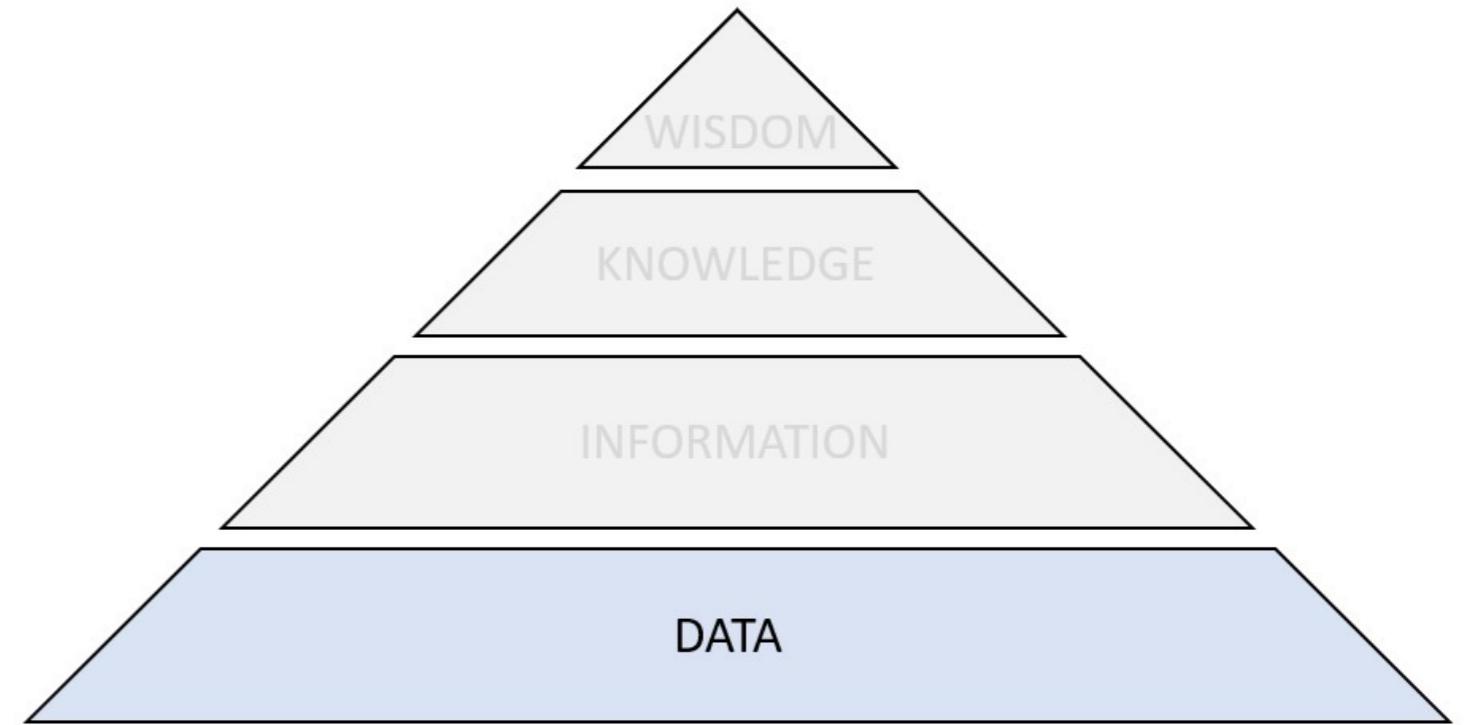
# The DIKW pyramid



# DIKW pyramid: Data

- Collection of raw observations or measurements
- Unorganized, unprocessed, does not have meaning (yet)

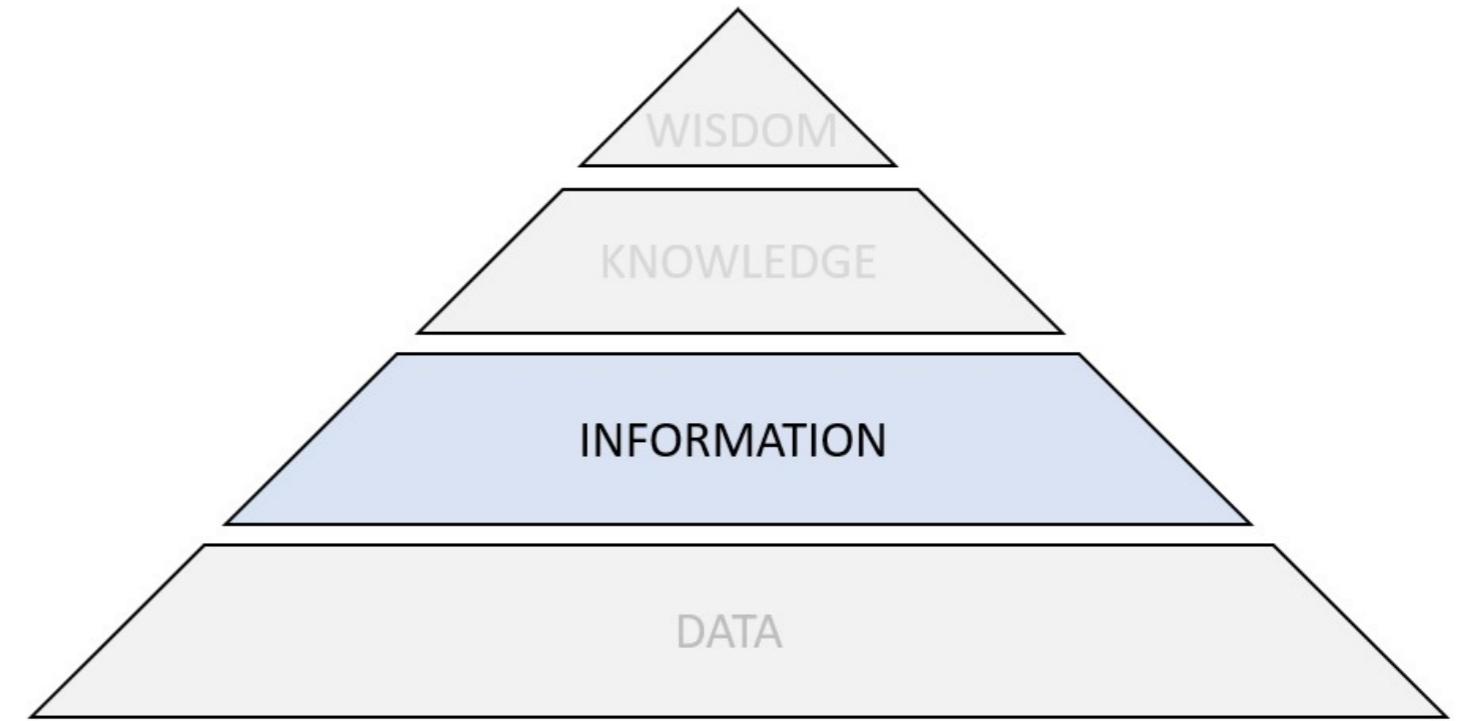
*The thermometer shows 15°C/59°F and there are dark clouds. It is starting to rain.*



# DIKW pyramid: Information

- Raw data placed into context
- Typically done by organizing or aggregating data

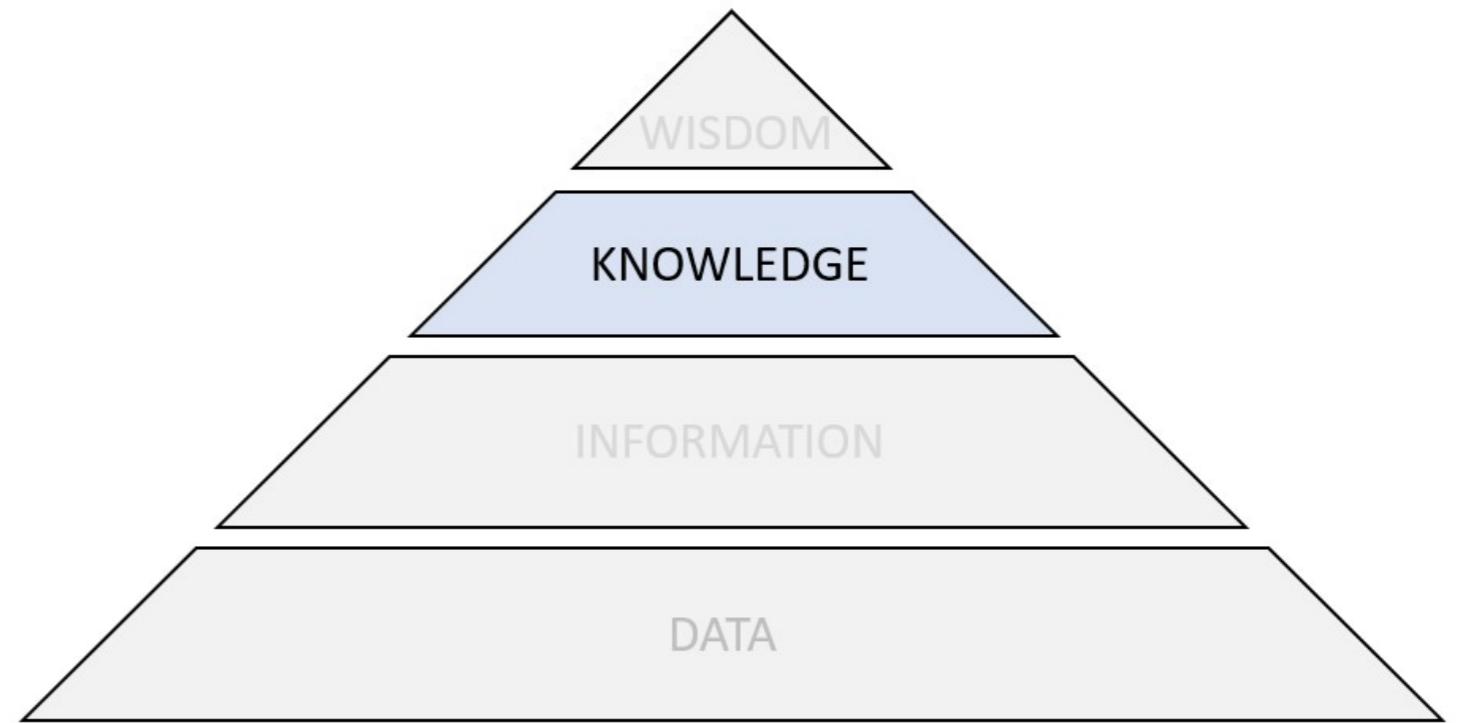
*First the temperature dropped several degrees, then it became cloudy and then it started to rain.*



# DIKW pyramid: Knowledge

- Combine information and make connections to learn and gain meaning
- Typically done by detecting patterns, making generalizations or predictions

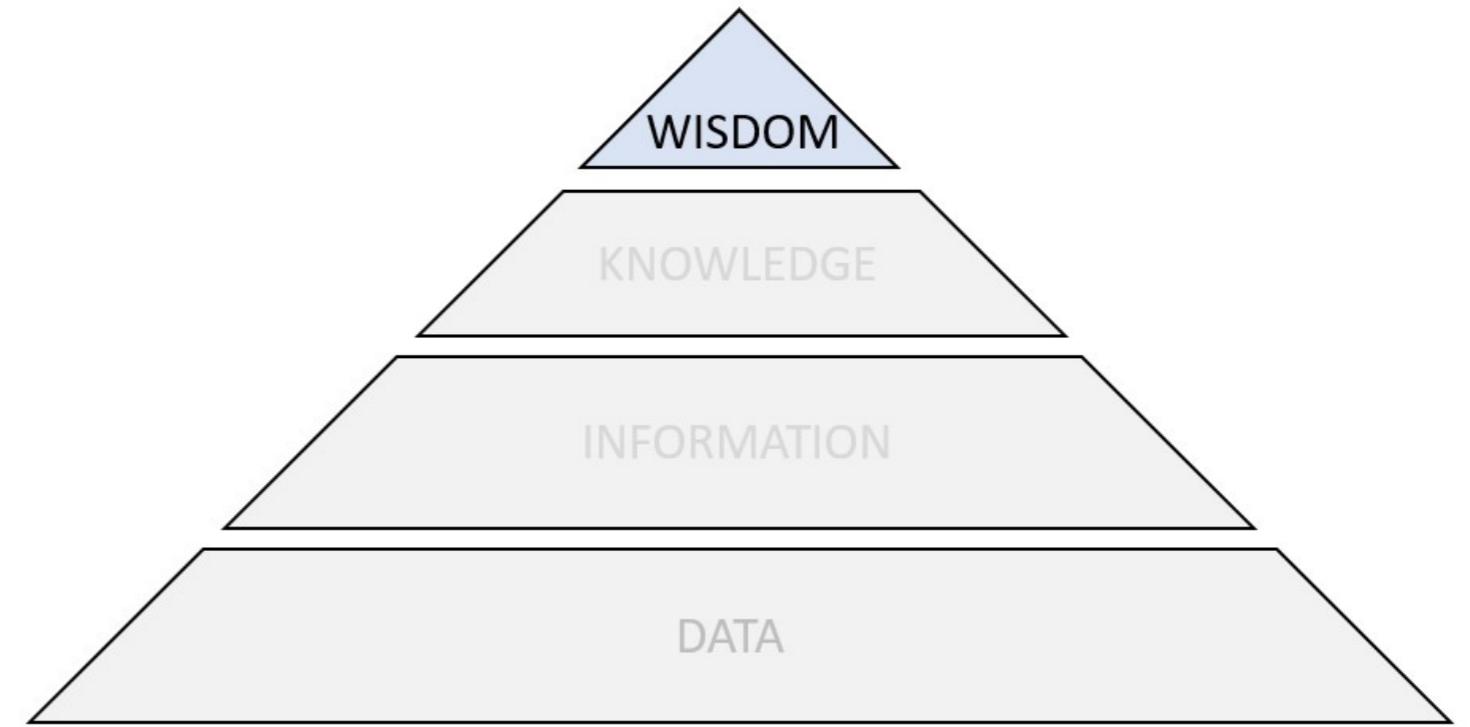
*A drop in temperature followed by the formation of dark clouds, predicts that it is likely going to rain.*



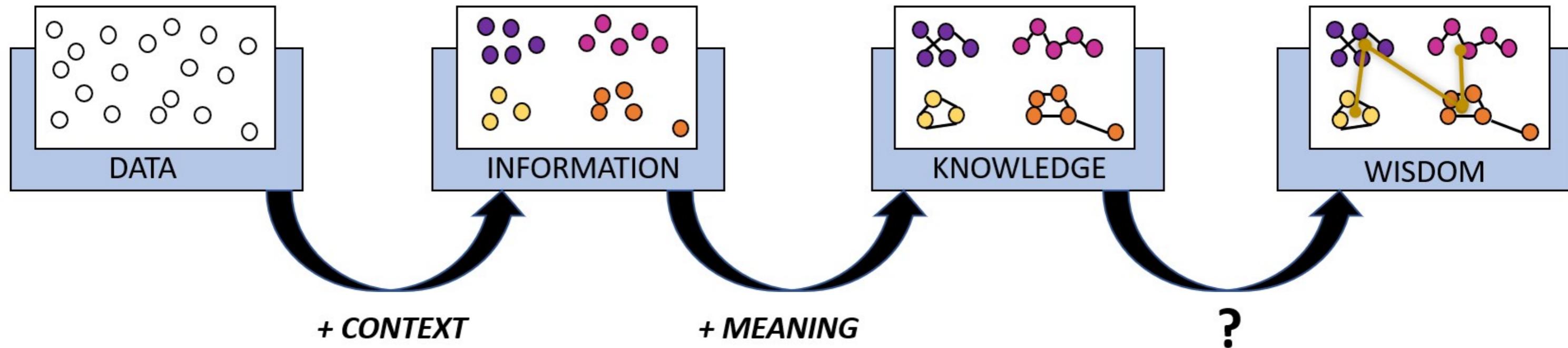
# DIKW pyramid: Wisdom

- Applied knowledge to act proactively
- Typically done by combining knowledge logically to determine the course of action

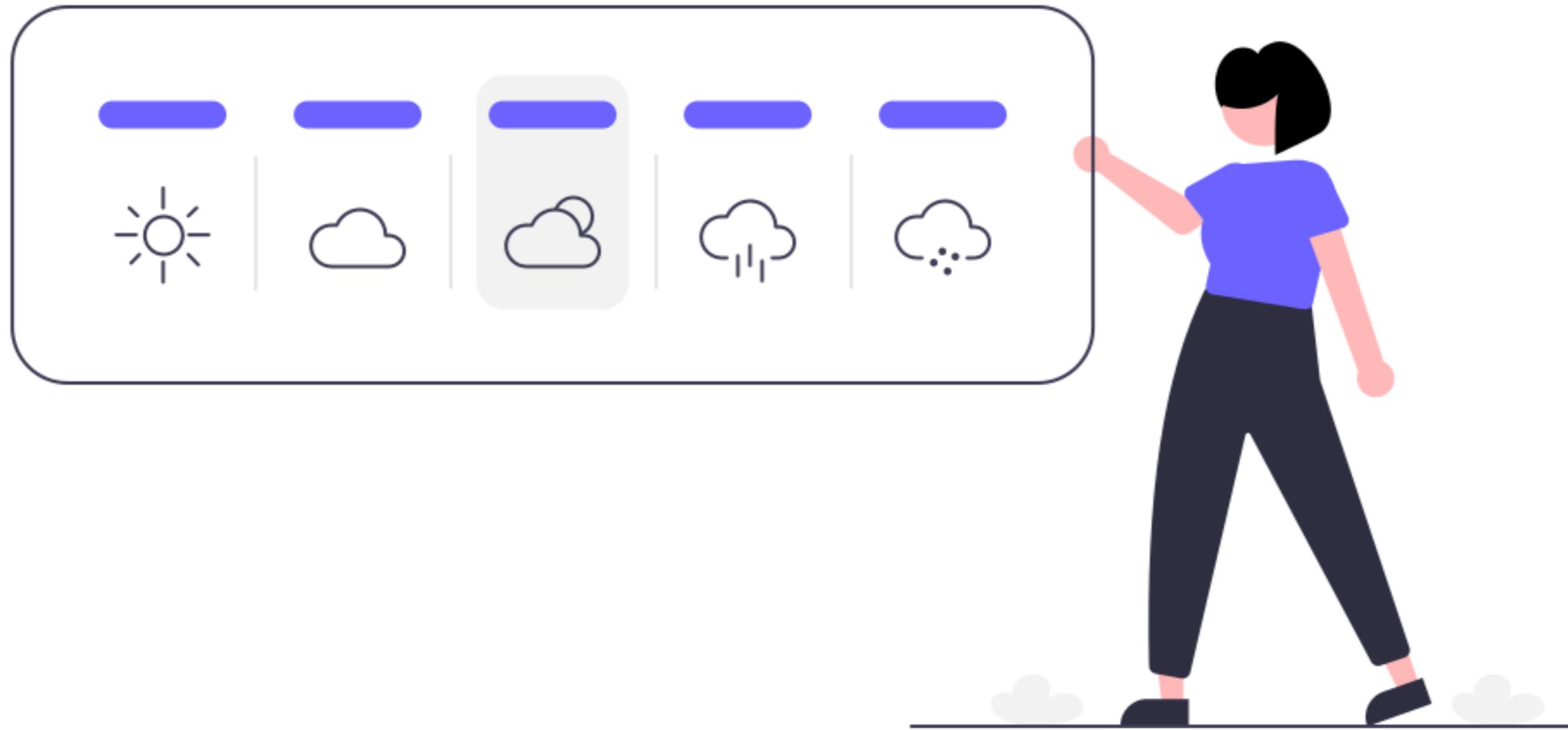
*Based on my knowledge of the weather, I know when it is going to rain and can bring my umbrella.*



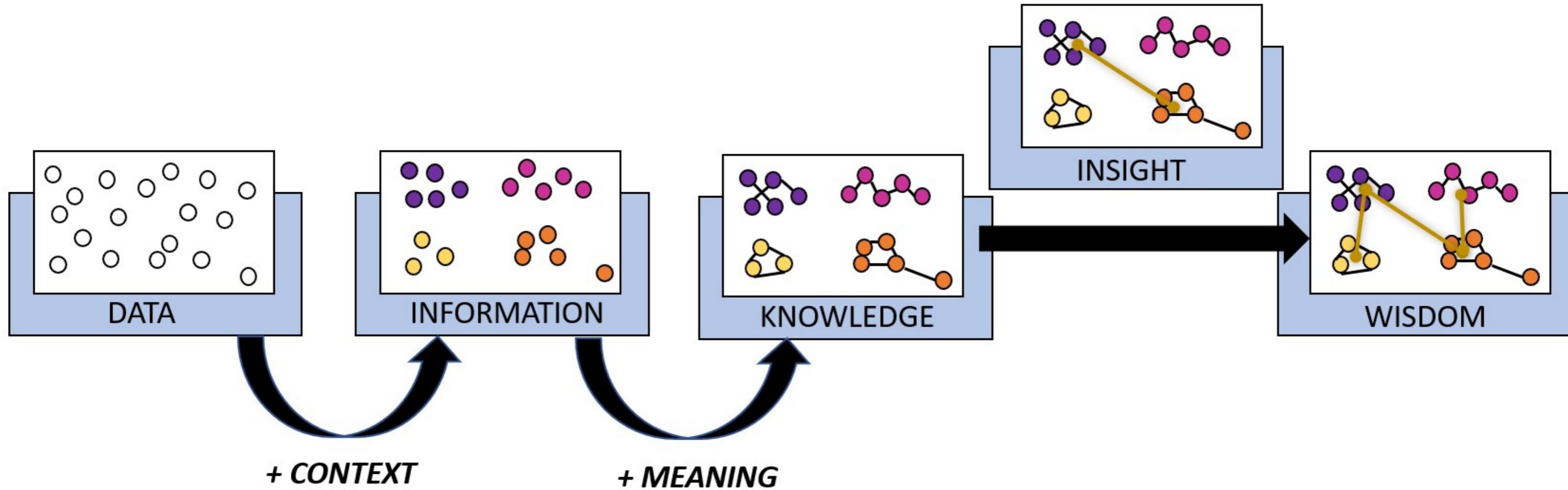
# The path to wisdom



# The path to wisdom



# Insights are the key



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# **Let's practice!**

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# Data-driven decision making

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# Why data-driven decisions matter

*Data-driven decision making is the process of using data to make an informed decision about a specific problem and acting upon it.*

- Optimize performance
- Gain a better understanding
- Protect against risks
- Determine the best course of action

# Misconceptions about data-driven decision making

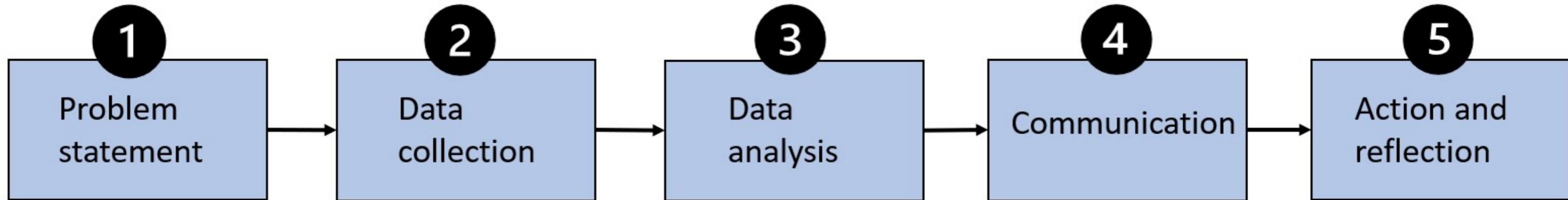
- Data-driven decision making is **not** just for large organizations
- It is **not** only the responsibility of the data team
- It is **not** the only or the best answer to solve problems

*The Evolution of Decision Making:  
How Leading Organizations Are  
Adopting a Data-Driven Culture*

## 3 Ways to Build a Data-Driven Team

The world's most valuable resource is no longer oil, but data

# Data-driven process



- 5 main steps that underpin every data-driven process
- Defining the problem statement is very important
- Taking action based on insights is the end goal

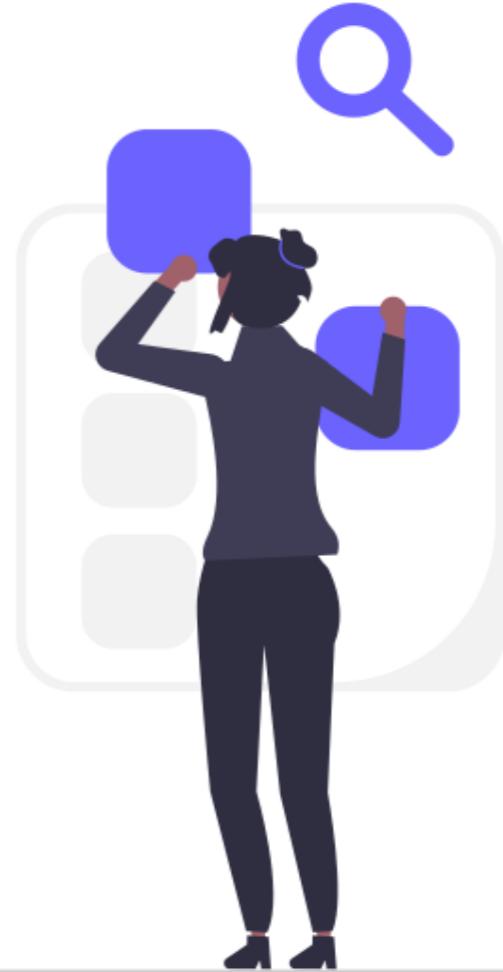
# Problem statement

- What is the problem you want to solve?
- Guides the data-driven process
- Typical problem categories:
  - Describing the state of an organization or process
  - Diagnosing causes of events
  - Detecting anomalies or predicting events



# How to define a problem

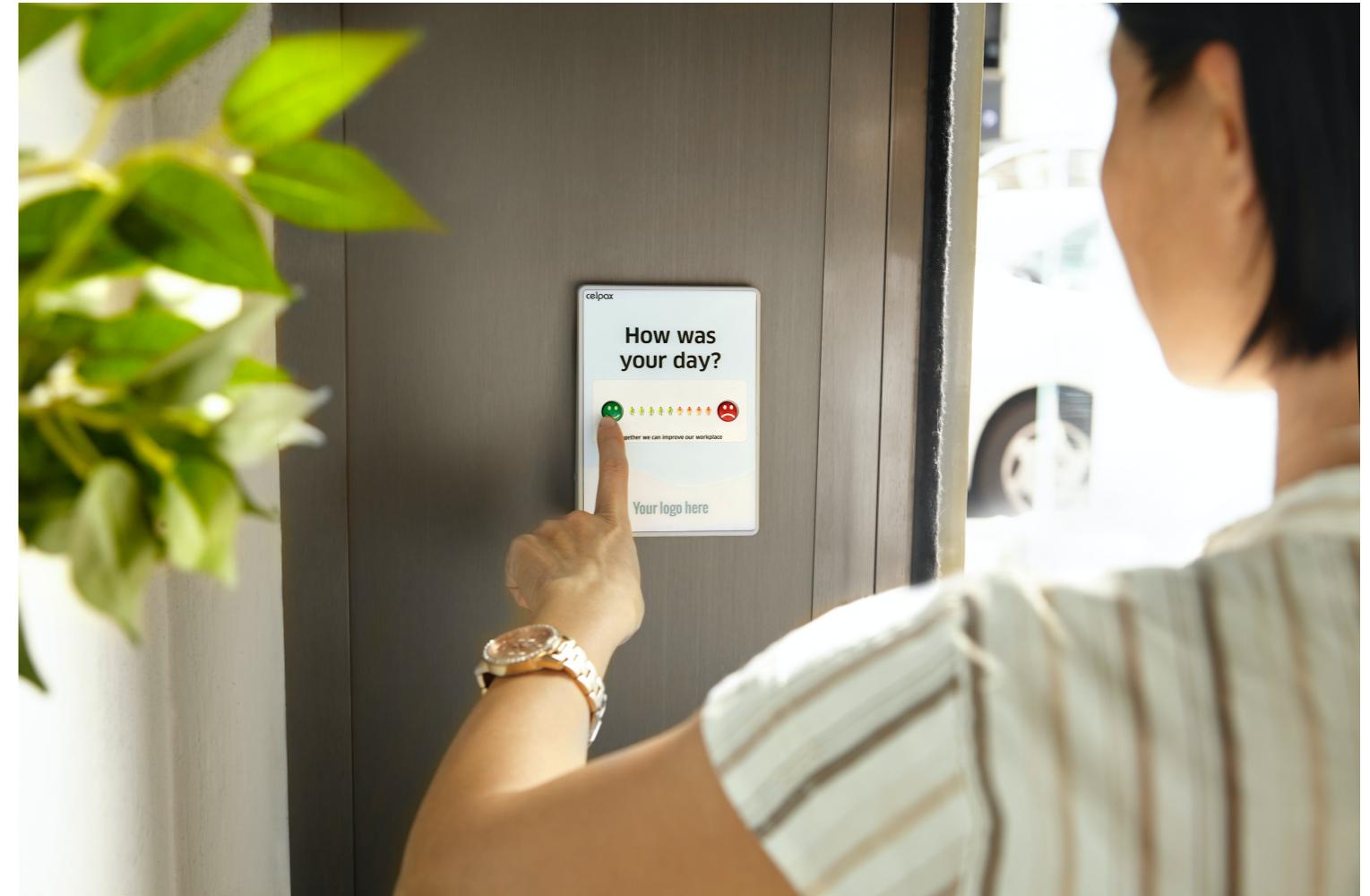
- Guiding questions:
  - What is the current situation?
  - What do we need to know?
  - Where do we want to be?
- A good problem statement is:
  - Clearly defined
  - Actionable
  - Realistic
- It can help to start from a question that needs to be answered



# Example: customer satisfaction

*How can we improve customer satisfaction?*

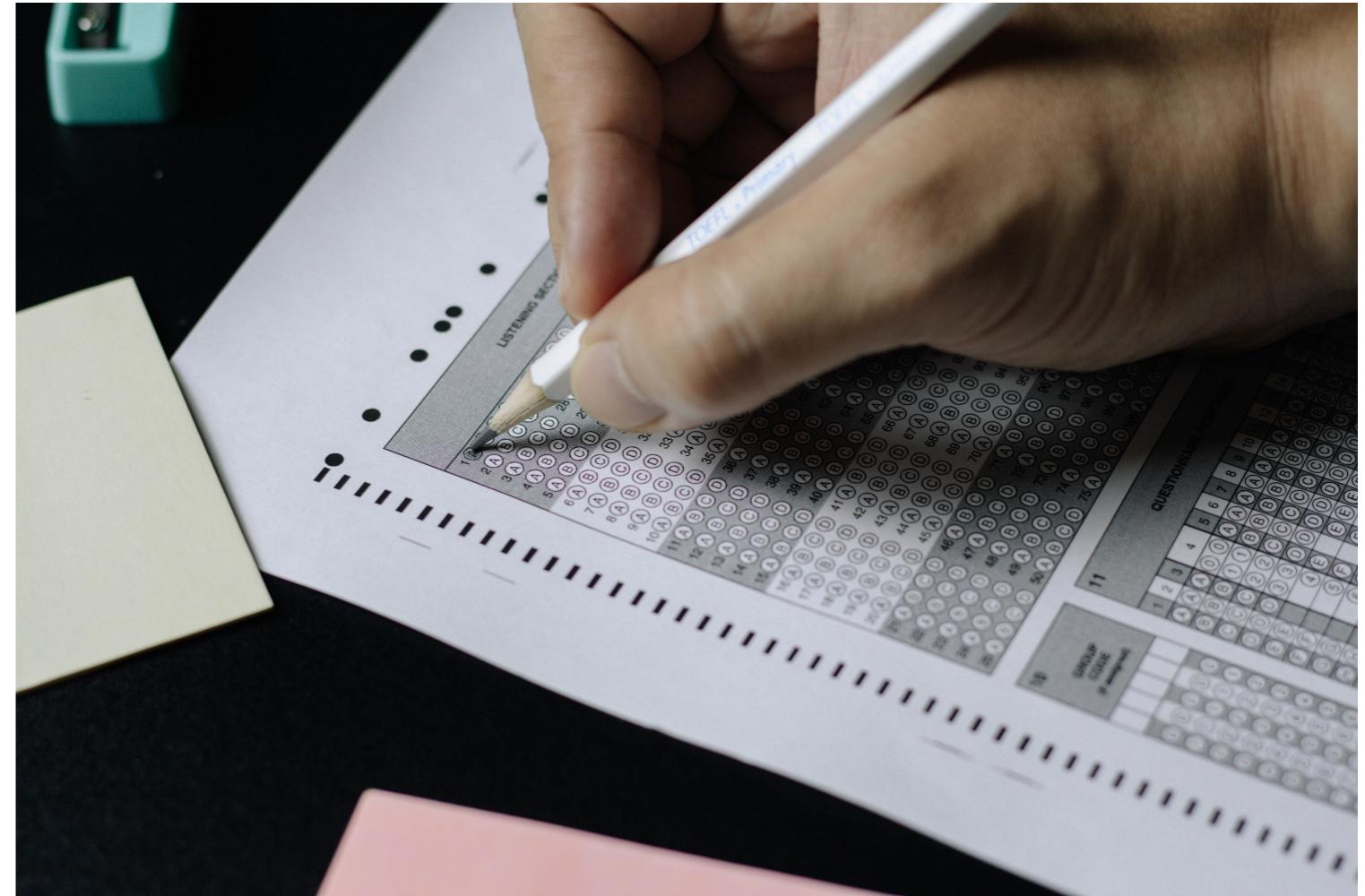
Customer satisfaction is currently under our target. We need to know the main reasons for a negative score so we can take measures to improve customer satisfaction.



# Example: student performance

*Why are average math scores of students in decline for the last three years?*

The last three years math scores of students have declined. We need to know what the main causes are of this decline so we can take measures to counter it.



# **Let's practice!**

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