

Data Lifecycle Scenario: Hospital Patient Monitoring

You are given a short scenario to analyze.

Step 1: Individual work Draw the lifecycle diagram, indicating:

- the sources of data,
- potential issues with quality, trustworthiness, or usability,
- the expected type(s) of data (structured / semi-structured / unstructured)

Step 2: Group Discussion: Compare your individual diagrams and notes with group members. Reflect on each stage of the lifecycle with your team and answer the guiding questions provided, completing the **lifecycle-step boxes** together. Prepare a brief summary (keywords or 1–2 sentences) to present.

Time guideline: 5 minutes individually, 10 minutes in groups.

Scenario Description: Hospital Patient Monitoring

Patients in a hospital are continuously monitored for vital signs such as heart rate, blood pressure, oxygen saturation, and temperature, using wearable sensors and periodic blood tests. Doctors and nurses also take notes during check-ups, documenting symptoms, treatment plans, and observations. The hospital seeks to improve patient care by identifying critical events early, predicting complications, and optimizing resource allocation (e.g., ICU beds, staff scheduling, and medication management). Data may come from multiple departments, with varying formats and frequencies, and must be combined to provide a complete picture of each patient's condition.

Scenario Analysis (individual work): Draw the lifecycle diagram, indicating:

- Source(s) of the data (human/machine, internal/external)
- Data type (structured / semi-structured / unstructured)
- Any obvious quality, reliability, or trustworthiness issues

Lifecycle diagram

Data Lifecycle Reflection (group work): For each stage, reflect on what it could involve in this scenario. Consider:

- What types of data might be missing or inconsistent?
- How could the hospital ensure data privacy and security?
- What kind of alerts or summaries would be useful for doctors?
- Could some data be combined or enriched from multiple sources (e.g., labs, imaging, and patient-reported data)?

Collect

Clean / Preprocess

Store

Analyze

Communicate / Report