

Exercise Sheet: Practical Data Collection

Data, Data Storage, Data Collection

Exercise 1 - Data Collection Methods

For each research question, indicate the most suitable data collection method and justify your choice in one sentence.

- (1) How do students spend their free time?
- (2) What is the average temperature in a city?
- (3) How many people visited a website last month?
- (4) Does a new drug reduce symptoms?
- (5) What are the most popular restaurants in town?

Exercise 2 - Identifying and Mitigating Bias in Data Collection

For each scenario, identify the type of bias, explain why it is problematic, and propose a mitigation strategy.

- (1) A survey about student stress is sent to students who attended lectures.
- (2) A fitness tracker records steps made during the day but only when the user wears it.
- (3) A company develops a new product and posts a poll about it on its website.
- (4) A study on sleep habits collects data from smartwatches.
- (5) A recommendation system collects user clicks to train its model, but only shows popular items to new users.
- (6) A sensor network in a city that has more sensors in wealthy neighborhoods shows good air quality reports.