

Exercise 08: Data processing

In the lecture we covered the classic examples of data processing:

- Sorting
- Filtering
- Mapping
- Summarising

In this exercise you must now apply what you have learned.

In the `Analyses` class, implement the methods for analysing the football data. When doing so, please note the Javadoc comments. The test class `AnalysesTest` validates your results.

To do this, read in the data using `Bundesliga bl = Bundesliga.loadFromResource();` and work with the existing data structures `Bundesliga`, `Club` and `Game`.

Task 1: Goal statistics

Write methods that compute the goal statistics.

- G1: How many goals are scored in each game on average?
- G2: How many goals are scored in each game in the 1st league on average?
- G3: How many goals are scored on a match day in the 2nd league on average?
- G4: Is it true that on average more goals are scored in the afternoon games (15:30:00) than in the evening games?
- G5: Is it true that on average clubs in the 3rd league score more goals at home than away?

Task 2: Clubs

- C1: How many goals did FC Bayern Munich (Club 1) score?
- C2: How many goals did FC Schalke 04 (Club 2) score?
- C3: How many points does 1. FC Nürnberg (Club 20) have? A win counts 3 points, a draw 1 point, a defeat 0 points.
- C4: What is the goal difference of VfL Bochum (Club 26), i.e. the number of goals scored vs. goals conceded?
- C5: Which three clubs scored the most goals at home, and how many did they score?
- C6: Which club scored the fewest goals away, and how many did they score?