

## General task description

According to the test-driven development principle, our candidate was given a test case (unit test) in which a component to be implemented was tested. Based on the test cases, it should be possible to explain within a few minutes what the implementation has to achieve. The tests are used during the implementation for function control.

The test case tests the candidate for the abstraction capability of written source code and his or her approach to new components. The focus is on object orientation/expandability, readability and efficiency.

## Time

The task should be comprehended within a few minutes. The estimated implementation time is approx. 45 minutes. Experienced developers can achieve the required result in 15-20 minutes. The implementation should be completed after 1 hour at the latest.

## Assessment criterias

1. Object orientation
  - 1.1. Division into classes and interfaces for identified additional functions, if applicable.
  - 1.2. In the optimum case, extensibility is achieved without adjustments to the existing code. This goal is achieved by a small modification in the first bonus task.
2. Efficiency
  - 2.1. Use of classes that are efficient for the task
  - 2.2. No constant precalculation during manipulations. Calculate when required.
3. Readability
  - 3.1. Classes are uniformly structured (example arrangement: fields, constructors, methods)
  - 3.2. Arguments, auxiliary methods, and fields are speaking.
4. Function
  - 4.1. All tests shall be passed
  - 4.2. The component may also complete similar test cases.
  - 4.3. Constructors and methods check arguments
5. Speed
  - 5.1. Understanding built up within 15 minutes
  - 5.2. Implementation within 45 minutes