2IO23 Design-Based Learning
Assignment I

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Introduction

This assignment requires that a subgroup in your team formally specifies and subsequently implements an algorithm that processes a text file. The remaining team members subsequently assess the formal specification and create testcases based on the formal specification. These testcases must subsequently be executed on the implementation.

Details

The text files that are to be processed by your program are simple text files containing numbers. Numbers are separated by a single space character. There is no *a priori* bound to the size of the text file.

Assignment

The Fibonacci sequence is a sequence of numbers in which the first number of the sequence is 0 and the next is 1. Every successive element in the sequence is constructed by adding the previous two numbers. Assume that the text file contains N numbers, indexed by 0 up to but excluding N. The program you must create computes the sum of the numbers (from the text file) on positions given by the Fibonacci sequence.

Disambiguate the informal specification, create a formal Z specification and implement your specification. Let the remaining team members assess the formal specification and create testcases. Execute these testcases and write down your test report.