

Master's Thesis

# The coin weighing problem

The question of finding a small subset of defective coins from a set of regular coins in the fewest number of weighings has been a notorious problem.

Suppose there is a collection of  $n$  coins so that some of them are defective. In other words, we know that the weight of regular coins is  $A$ , and the weight of the remaining coins is  $B$ , where integers  $A$  and  $B$  are given. The problem is to determine the weight of each coin by weighing subsets of coins in a spring scale. The main figure of merit when studying adaptive coin weighing algorithms is the number of required weighings in the worst-case and in the average-case. In this project, we design and implement an efficient algorithm which works for two coins.

## Prerequisites

Coding theory, combinatorics

Good programming skills

## Contact

## Advisors

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