Laboratory 3 - additional materials
Simple Genetic Algorithm

1. Task specification for Simple Genetic Algorithm implementation

Write a program which implements Simple Genetic Algorithm (SGA) in order to optimize the function

$$f(x) = (e^x \sin(10\pi x) + 1) / x + 5$$

on the $[0.5, 2.5] \subset \mathbf{R}$ interval in which the function takes positive values. For SGA implementation please refer to your lecture notes or the lecture snapshots presented in the following figures.

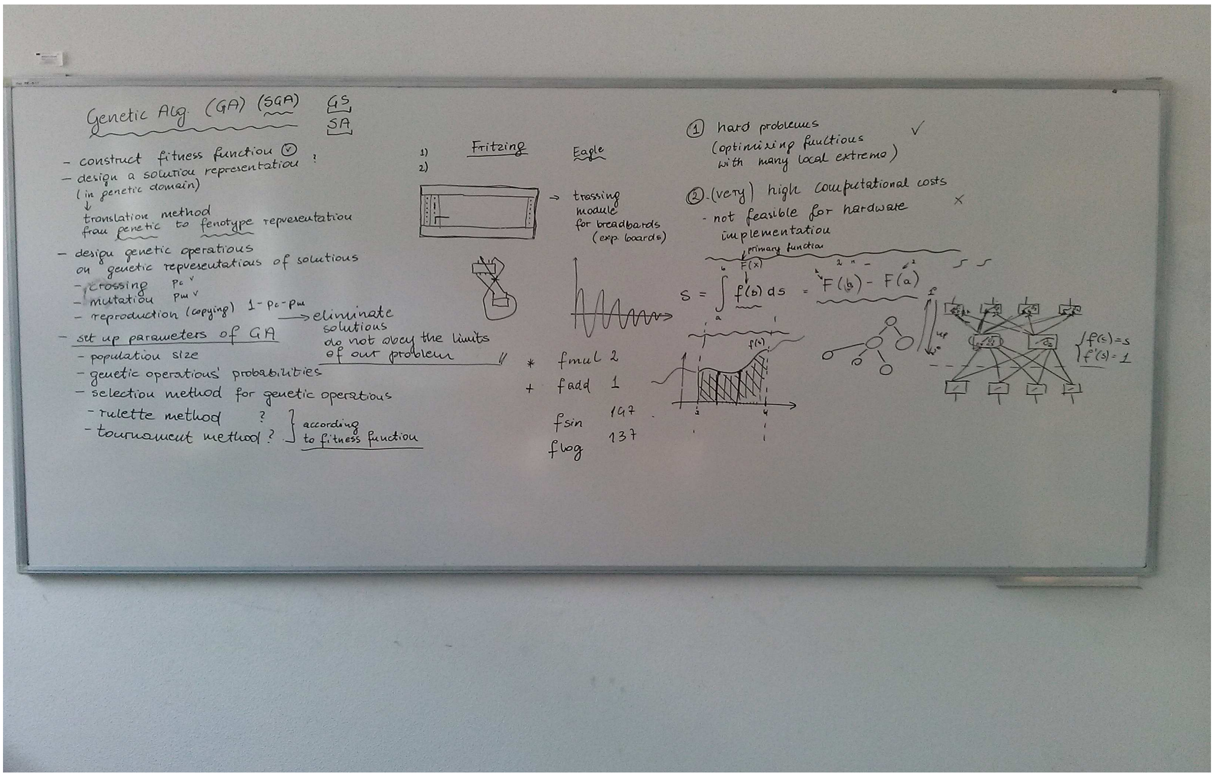

Fig. 1. Simple Genetic Algorithm - general notes

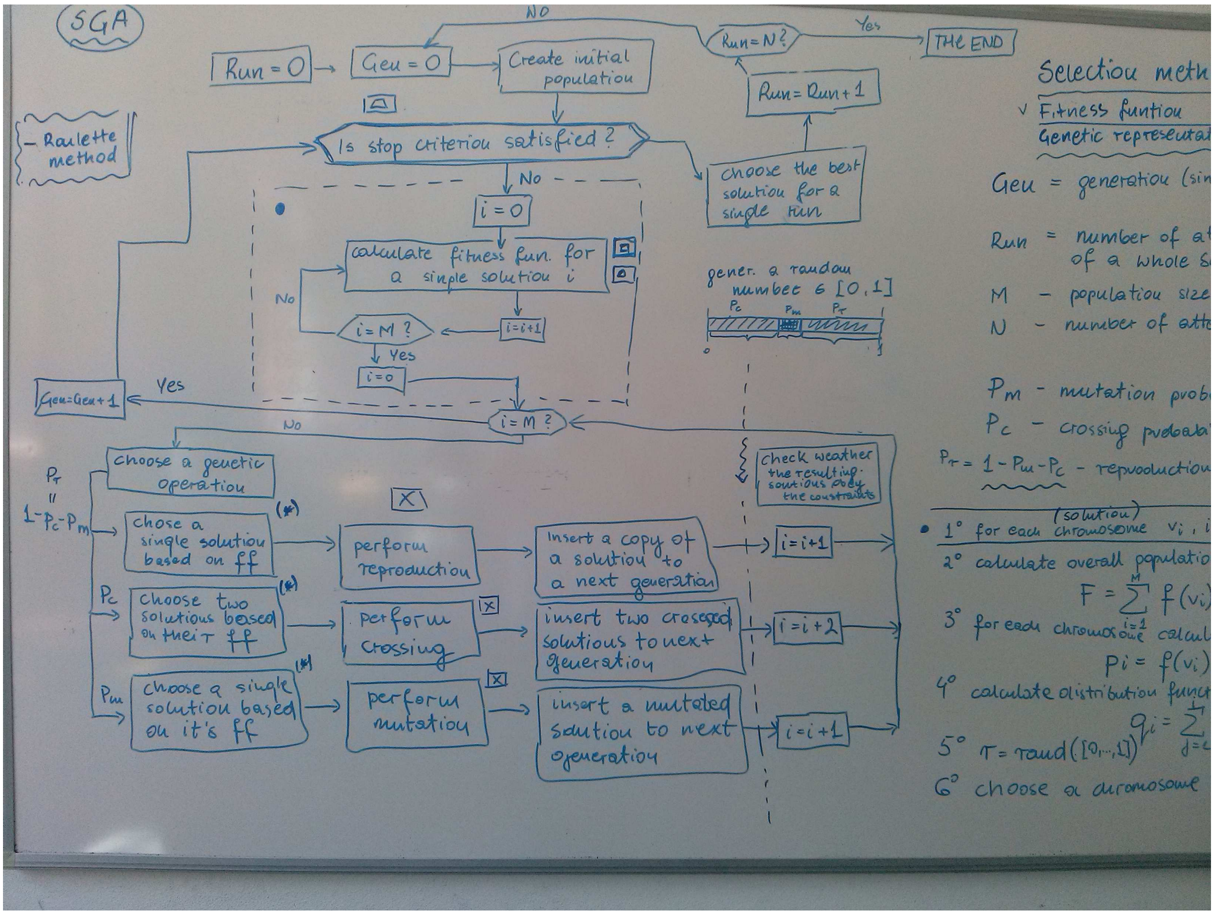

Fig. 2. Simple Genetic Algorithm - block scheme

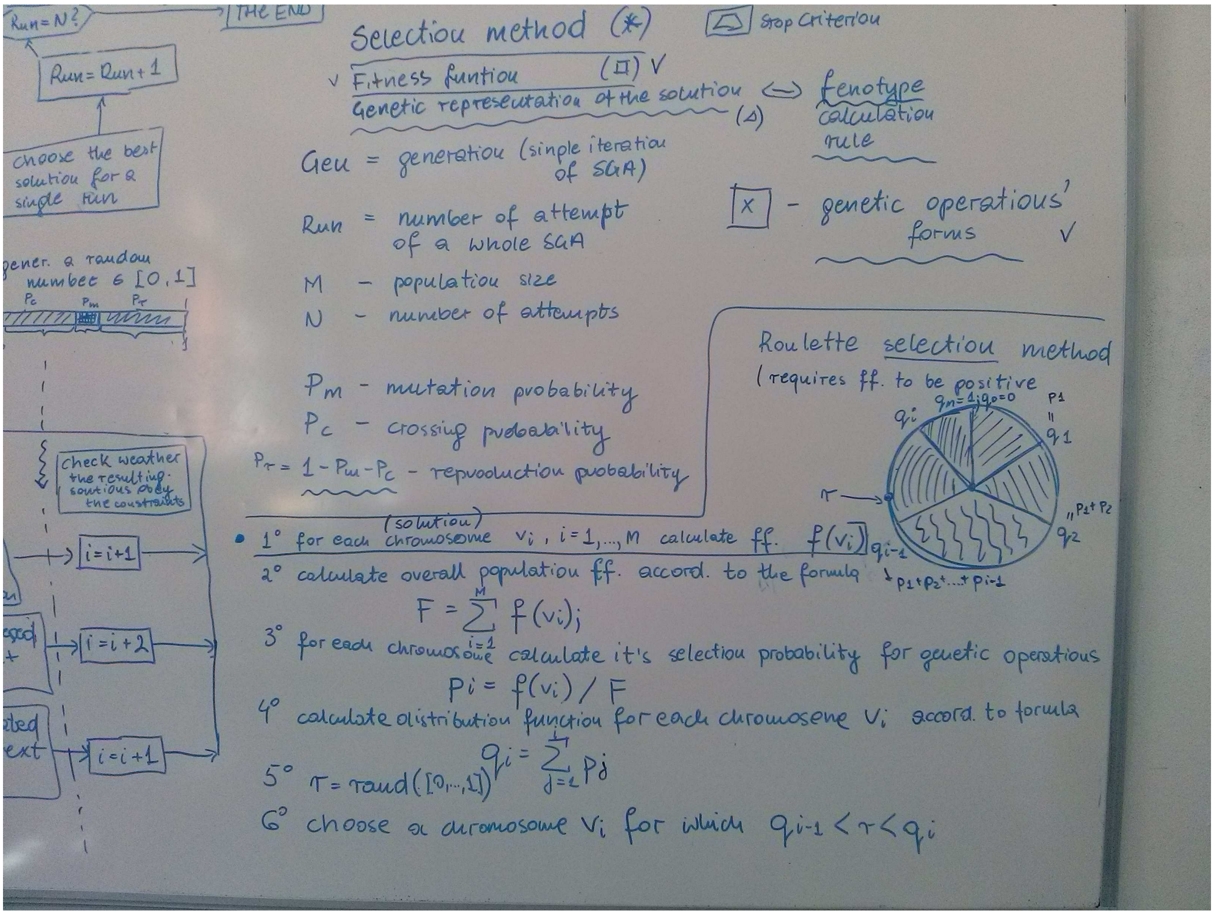

Fig. 3. Simple Genetic Algorithm - roulette selection method

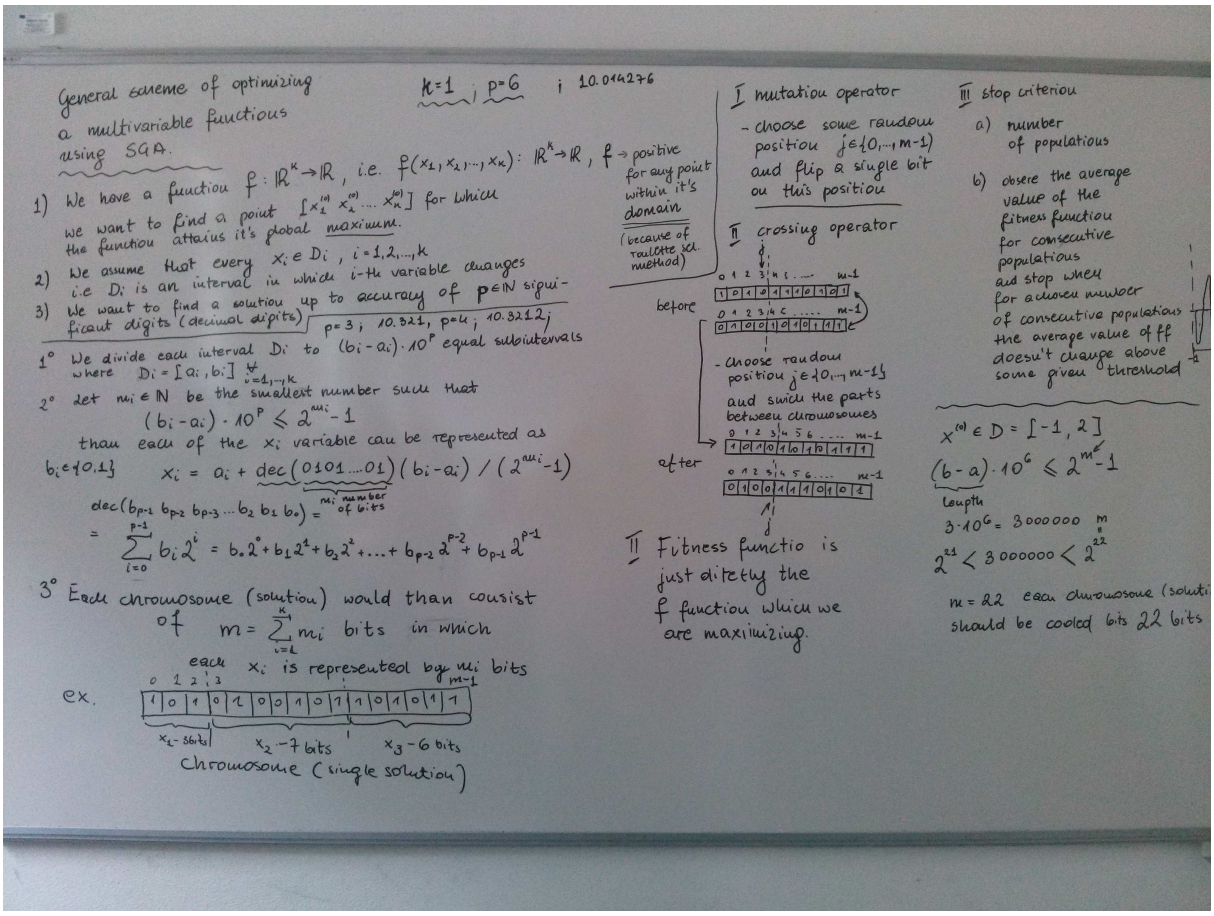

Fig. 4. Simple Genetic Algorithm - general, fixed decimal precision optimization scheme for multivariable positive valued functions defined on an set of intervals, snapshot 1

Remark: Note that for k = 1 the above method becomes a general, fixed decimal precision optimization scheme for positive valued function of one variable defined on a single closed interval, i.e. the scheme refers exactly to the laboratory task.

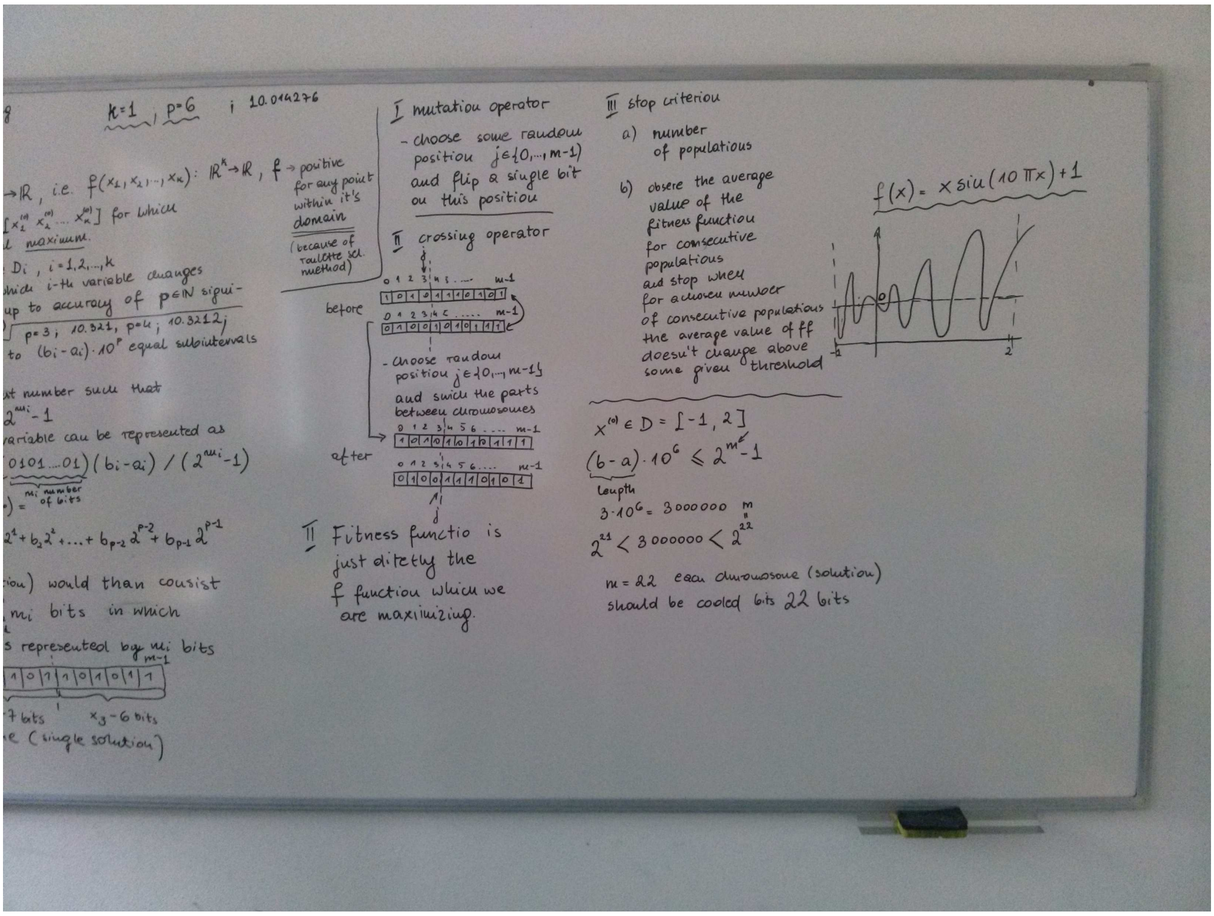

Fig. 5. Simple Genetic Algorithm - general, fixed decimal precision optimization scheme for multivariable positive valued functions defined on an set of intervals, snapshot 1