Internship Argo Software, report 2

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1 The Time Table Problem in the Italian School System

By citing Colorni, Dorigo, and Maniezzo [1] let's start formalizing the model of the Italian School System.

1.1 Teachers

Teachers have an eighteen hours workweek. These eighteen hours are considered to be stored into a number of didactic units, one of which might be considered to be composed of one or more hours. In the simulation these units are being called U.D. (unità didattiche). The variable totUD is the total of these didactic units, while minUD and maxUD represent respectively the minimum and the

maximum, of that teacher for that specific class. Therefore, teachers may teach one or more subjects, in two or more classes.

1.2 Classes

2 Genetic Algorithm Introduction

Genetic algorithms are a class of optimization algorithms inspired by the dynamics of evolution. The approach follows the survival of the fittest heuristics. Given a number of individual outcomes, called generation, each one of these inherits valuable traits, useful for survival, from its ancestor. Each specimen belonging to a single population may vary, having traits that will slow the survival will eventually lead to the interruption of that speciment.

Bibliography

[1] Alberto Colorni, Marco Dorigo, and Vittorio Maniezzo. "A genetic algorithm to solve the timetable problem". In: *Politecnico di Milano, Milan, Italy TR* (1992), pp. 90–060.