

## POVZETEK

V diplomskem delu obravnavamo genetski algoritem za problem šolskega urnika. Problem urnika definiramo kot dodeljevanje ur in predavalnic danim predavanjem. Pri tem opišemo omejitve, katerim mora urnik zadostiti, da je dopusten, in omejitve, ki so le zaželeno. Slednje uporabimo za ocenjevanje kakovosti urnika. Na kratko opišemo metode, ki se uporabljajo za reševanje tega problema. Za reševanje problema urnika uporabimo genetski algoritem. Podrobno opišemo genetske operatorje (prekrižanje in mutacijo). Algoritem implementiramo v programu Kronos. Na podatkih z Oddelka za matematiko Fakultete za matematiko in fiziko naredimo analizo parametrov genetskega algoritma in prikažemo najboljši dobljeni urnik.

**Ključne besede:** urnik, problem urnika, šolski urnik, univerzitetni urnik, dopustna rešitev, omejitve, kriterijska funkcija, predavanje, srečanje, optimizacija, optimizacijski problem, metaheuristike, algoritem, genetski algoritem, generacija, populacija, osebek, genetski operator, prekrižanje, mutacija, selekcija, selekcija z ruleto, elita

**Key words:** timetable, timetable problem, school timetable, university timetable, feasible solution, constraint, fitness function, lecture, meeting, optimization, optimization problem, metaheuristics, algorithm, genetic algorithm, generation, population, individual, genetic operator, crossover, mutation, selection, roulette selection, elite

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