# LECTURE TIME TABLE SCHEDULING OPTIMIZATION USING GENETIC ALGORITHM

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## Abstract

This paper details the implementation of a computer program which employs Genetic Algorithms (GAs) in the quest for an optimal lecture timetable generator. GA theory is covered with emphasis on less fully encoded systems employing non-genetic operators. The field of Automated Timetabling is also explored. A timetable is explained as, essentially, a schedule with constraints placed upon it. The program, written in C, incorporates a repair strategy for faster evolution. In a simplified university timetable problem it consistently evolves constraint violation free timetables. The effects of altered mutation rate and population size are tested. It is seen that the GA could be improved by the further incorporation of repair strategies, and is readily scalable to the complete timetabling problem. Appendices include the entire source code.



*Keywords*:- Chromosome, Crossover , Evolution ,Fitness, Generation Genetic Algorithm, Local Search ,Mutation ,NP-Hard ,Population ,Scheduling Selection ,Timetabling