Abstract

The proposed system presents a novel approach of solving University timetabling which is NP-hard problem using Genetic Algorithm. Genetic Algorithm is frequently deployed Meta heuristics algorithm which can be effectively used to difficult combinatorial optimization problems. Although, there has been an extensive research towards this field but majority of the research results are much in its nascent stage. The previous researchers have used various methods like Tabu search, Simulated Annealing, network flow, graph coloring, etc. Genetic Algorithms are effective in solving many such optimization problems. The current work presented uses Genetic Algorithm to design an effective model for scheduling with challenging constraints considerations. The objective of the research is to create a model using Genetic Algorithm to the extent it can be used to generate the acceptable schedule using probabilistic operators like mutation and crossover. The design of the fitness function has considered the hard constraints. The simulation shows the better result in minimum time.

References

Intelligent Systems, HIS’06, Sixth International Conference, Dec. 2006.
- Andrea Schaerf, "Multi-Agent Systems for Optimization Problems: the University Course Timetabling Case Study", WOA, Rende (CS), Italy, July 5th, 2011.
- Baki Koyuncu, Mahmut Seçir, "Student Time Table by Using Graph Coloring Algorithm", retrieved from http://www.emo.org.tr/ekler/76e76856c7fe3a3b_ek.pdf, 2007.
- Nasser R. Sabar, Masri Ayob, Graham Kendall, Rong Qu, "Roulette wheel Graph Colouring for Solving Examination Timetabling Problems", COCOA- 2009, 463-470.
University Timetabling based on Hard Constraints using Genetic Algorithm

- 20, 2009.
  - Aldy Gunawan, Kien Ming Ng, &quot;Solving the Teacher Assignment Problem by Two Metaheuristics&quot;, International Journal of Information and Management Sciences (2011), 73-86.

Index Terms

Computer Science Algorithms

Keywords

Class Scheduling Problem Cross Over Genetic Algorithm Mutation