

Abstract

Lecture optimal scheduling system must consider the factors and constraints that must be met. These factors are the ratio of the number of faculty and students, the availability of class slots, as well as an interest in a subject. While the limits that must be met (hard constraints) and do not have to be met (soft constraints) remains a reference in making the course scheduling system. Many algorithms are developed to solve the problem of scheduling courses. The author would implement CT-Pro algorithm and Particle Swarm Optimization (PSO). Algorithm CT Pro is one of the algorithms used to determine patterns often emerge. This algorithm uses association rule analysis that enables the schedule is not experiencing a clash between courses or room. While the Particle Swarm Optimization algorithm (PSO) is used to initialize the particles to the optimal solution by using a configuration parameter. PSO simulated in matriks with iteration lead to particle target. In this final testing is done by looking at the value of minimum support and confidence to know the clashes on scheduling. Based on the results of the implementation and the research it was concluded that by using the minimum support with a range of 10-50 % and 50-100 % confidence will get maximum results in minimum support when set to 10% and confidence in set 100 % because the higher the value the higher the confidence knowledge and the lower the value , the lower the confidence generated knowledge . With the low knowledge that forms the schedule will be less , thus making the fulfillment of soft and hard constraint constraint increasingly difficult .

Keyword: *soft constraint, hard constraint, CT-Pro, association rule analysis, minimum support, Particle Swarm Optimization*