Abstract

University Course scheduling is an optimization problem in most of universities in Indonesia, which is how to design course shceduling requirements to meet hard constraint and to minimize soft constraint violations. Hard constraint and soft constraint is determined by the Institution which concerned. The same thing happened to IT Telkom. The Increasing of students and course events while number of timeslot has not changed much caused the more constraint violations, especially for soft constraint. Plus, there are many students who repeat their lower semester course or taking the higher semester, so that enlarge the number of violations.

And therefore, a Course scheduling optimization system is built by using Harmony Search algorithm. Harmony Search algorithm is an algorithm that adopts jazz music performance where the musicians do excersise together to produce the best harmony. That harmony considered as the best solution in optimization problem.

The final results is Harmony Search algorithm could optimizing timeslots for course scheduling with appropriate parameters after through some test, ie HMCR=0.5, PAR=0.5, dan HMS=25. The solution is influenced by the solution randomization and parameters probability.

Keyword : scheduling, optimization, hard constraint, soft constraint, Harmony Search algorithm.