Abstract

Examination scheduling is one of the student management process to assign examination schedule for every student based on the subject they have took. This examination scheduling problem is solved by using one of the Data-Mining techniques and Graph-based Hyper Heuristic (GHH) approach to generate solution that have not any hard-constraint violation and low soft-constraint violation.

Data mining utilization process is generated using clustering technique with TwoStep algorithm on student registration database. The result of the clustering is a grouped student registration database. Then, the data is used as a Subject Data Initialization in Graph-based Hyper Heuristic (GHH) algorithm optimization technique. GHH is an approach used in examination scheduling process by using some low level heuristic to determinate sequence of candidate solutions on subject scheduling and Tabu Search on minimum penalty solution search.

After these two techniques are well implemented, it can be concluded that the Data-Mining generates the better examination schedule. GHH combined with clustered data from TwoStep deliver a better penalty and average penalty value compared to GHH that is not combined with clustered data.

Keywords: *constraint*, *data mining*, *examination scheduling*, *Graph-based Hyper Heuristic, Two Step*