

ABSTRACT

Production scheduling is an important factor in production planning on a manufacture company. A good production scheduling will optimize the utility of available resources, so a company could reach the production target that has been made. In Order-based Company, formulating a production scheduling is not a simple matter.

PT. Medion is a company that produces drugs for animals. This company has many departments that support the core business. One of the departments is Poultry Equipment and Printing Department which perform the activity production because of order from other departments. The main activities of this department are to print drugs packages and to produce books for internal requirement of the company. The dynamic arrival of demand causes the production schedule become unable to be realized as planned before. Therefore, research need to be held on the department to design a scheduling application that could formulate schedule and reschedule rapidly, so the objective of production schedule could be reached.

On this research, heuristic algorithm development is applied on scheduling application to formulate the production schedule in Poultry Equipment and Printing Department PT. Medion. Heuristic algorithm is used to optimize work station utilization by considering the simplicity and practical aspects to understand the algorithm and application but it has a good performance. The performance that would like to be achieved is to reduce makespan. As the improvement of the algorithm, there are three priority rules used, those are EDD (*Earliest Due Date*), LPT (*Longest Processing Time*), and SPT (*Shortest Processing Time*). These rules are used to determine the product processing priority. However, the scheduling application uses the combination between three priority rules above, those are EDD combined with LPT and EDD combined with SPT, which could be chosen by planner to formulate production schedule. The makespan of heuristic algorithm using EDD combined with LPT rule is compared to heuristic algorithm using EDD combined with SPT rule, then it could be chosen the priority rule that results in minor makespan.

After implementation test toward the scheduling application, it could be concluded that the application can formulate schedule and reschedule rapidly for overcoming dynamic arrival of demand. Besides, implementation test by using real and sample data show that makespan of heuristic algorithm using EDD combined with LPT rule is smaller than using EDD combined with SPT rule.

Keywords : Scheduling, Heuristic, Scheduling Application, Order-based Production System, Makespan.