ABSTRACT

CV Gradient is a manufacturing company that manufactures various types of plastic-based products. The number of orders received from customers reaches an average of 5,000 - 7,000 pieces per day. In supporting the production process, the company accommodates four Injection Molding machines. The four Injection Molding machines are sorted in parallel and have the same function so that they can be labeled as a job system scheduling identical parallel machine. Based on observations and interviews, it turns out that CV Gradient often experiences production delays that are unable to meet the needs of the customer. The cause of the delay was apparently due to the optimal production scheduling arrangement of the CV Gradient. The scheduling method applied today is First Come First Serve (FCFS), which means that first-time customer orders are served. The weakness of applying the First Come First Serve method does not take into account the maximum completion time (Makespan) and average waiting time. Based on these problems, it can be done by designing a production scheduling proposal using the Greedy Algorithm so that the scheduling of the four machines is balanced. The purpose of this study is to design production scheduling of the four Injection Molding machines to minimize Makespan and Tardy Jobs. Based on the results of the study, scheduling Greedy Algorithm can produce optimal solutions that can minimize the Makespan and Tardy Jobs compared to scheduling the First come first serve (FCFS) method.

Keywords: Identical Parallel Machine, First Come First Serve (FCFS), Greedy Algorithm, Minimasi Makespan, Minimasi Tardy Job.