

Abstract

This research aims to develop the model of the demand that imitates the needs or demands of the customers with a computer program. The main function of this program to generate the demand data so that it is distributed the same way as the real demand under the uncertainty. The generated demand data will be used as the input for production scheduling of Job Shop with Parallel Machine. The computer program is developed under the principles of Economic Production Quantity (EPQ) and normal distribution to generate the annual demand which is converted into data daily or weekly data. Different case studies are crated to validate and verify the functions of developed computer program. The resulting data are fed into the production scheduling software in order to compare the results with the data with Level Production. The important measures are number of late jobs, maximum tardiness and total tardiness.

In the case studies, five jobs are to be scheduled by three and four machines using Earliest Due Date (EDD) and Shortest Processing Time (SPT). The case studies are varied by different demand variation at 5%, 10%, 20%, and 30% per month. The results show that total tardiness, number of late jobs, number of late lbs and maximum tardiness of generated demand data is lower than data from Level Production. This improvement suggests the computer program can be beneficial for actual production planning.