Evaluation of Queuing System for Simulation of Transport Construction Process in Nano

Concrete Factory of Qom

Mohammad Ehsanifar, assistant professor

Department of Industrial Engineering, Islamic Azad University of Arak

Emadoddin Hazavei, assistant professor

Department of Industrial Engineering, Islamic Azad University of Arak

Seyyed Amir Shokrollahi, M.S. in Industrial Engineering

Islamic Azad University of Arak

Abstract

During the course of a construction project, there are many situations in which formation of waiting lines or queues is inevitable. The effect of resource delays in queues on the overall project completion time and cost has motivated researchers to employ simulation for analysis of queuing systems in order to identify the best operational strategies to reduce the timewasted in queues. Providing proper and timely input data with high spatial and temporal accuracy for queuing systems simulation enhances the reliability of decisionsmade based upon the simulation output. Hence, the presented paper describes a methodology for collecting and mining of spatiotemporal data corresponding to the interactions of queue entities to extract computer interpretable knowledge for simulation input modeling. The developed framework was validated using empirical datasets collected from a series of experiments. The extracted relevant knowledge from the queuing system entities was used to update corresponding simulation models.

Keywords: Construction, Simulation, Queue, Queue discipline, Data mining, Discrete event simulation