

Karn Kankanok 2009: VBA Spreadsheet Simulation Add-Ins for Microsoft Excel.
Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering,
Department of Industrial Engineering. Thesis Advisor: Assistant Professor
Juta Pichitlamken, Ph.D. 131 pages.

We develop a VBA add-ins, SimXL, to do simulation on Microsoft Excel. This software provides functions for generating random variates from 15 distributions, both discrete and continuous. Our random number generator used for generating uniform(0,1) random variables is Multiply with Carry Pseudorandom Number Generator (Couture and L'Ecuyer, 1997). SimXL can present detailed simulation results, statistical summary (e.g., means and standard deviation), and graphical summary (such as histogram). We verify our software by checking statistical properties of the generated random variates against theoretical values. In addition, we also compare the simulation results from SimXL with those from standard software on two test problems: a queueing system and an inventory problem.

Student's signature

Thesis Advisor's signature

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