Solving Linear Equations(A$\underline{x}$=$\underline{b}$) Using Simulink

Kristina, S.T., M. Kom.

STMIK Widya Dharma, Pontianak, Kalimantan Barat

Abstract

The linear equation system (Ax=b) was the kind of simultaneous linear equation that usually use for solving a technical problem. In this work, the solving of linear equation system was computerize using simulink. Simulink was a facility that has been prepared by MATLAB software.

The method of solving linear equation system that used are LU factorization method, QR factorization, and SMW method that have visualized into mathematics blocks in simulink and make the program more user friendly. In this case, user friendly meant that the logic of program become easier to understand by user. Besides that, the program also using interface that made with handle graphic and caused program more effectively.

The result from this program are vector x value and the time of computation. For each method, vector x value are equal, but the time of computation are different. The time of computation depended the sizes of matrics, and from this point it can conclude that more big sizes of matrics, the time computations more bigger. Based on time computation methods comparison that has been use, it can decide that LU factorization method are the best method.