CAS 741: Problem Statement
System of linear solvers

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Table 1: Revision History

Date	Developer(s)	Change
SEP15, 2017	Devi Prasad Reddy Guttapati	Problem Statement

Many of the relationships in nature are linear, that means their effects are proportional to their causes. For example in Mechanics if we take Newtons second law of motion, $\mathbf{F = ma}$ says that force is proportional to acceleration and mass is the proportionality constant. For example in Electricity if we take Ohm's Law, $\mathbf{V = iR}$ voltage across the conductor is proportional to the current flowing though it and resistance is the proportionality constant. These examples shows us the importance of linear equations and solving them. In matrix notation the general form of linear equation is

$$\mathbf{Ax = b}$$

The most important problem in technical computing is the solution of system linear equations. So the aim is to create a library that contains a family of linear solvers which make the work easy. The software will be used by the undergraduate and graduate students, and will be very handy for academic tasks. We will solve the linear equations by giving the input in matrix-vector form. It is developed on windows platform. Expectations are the Software will be reliable, faster and accurate.