EECE210: MP1, Task 7

Consider the use of intefaces in the la4j library. In particular, why do you think it is useful to define an interface LinearSystemSolver and have multiple implementations of this interface?

First off, why we use interfaces:
-use of interfaces is for better design
-easily readable because the actual method is not all written within the code
-making an efficient way to list all implementations for the program created
-creates multiple inheritance which mirrors the extention of classes and is used between interfaces

An interface in java is a type of implemented class which use methods defined a classes. There are two main reasons why interfaces are useful: they provide a better design plan, and allows for multiple inheritance. An interface provides a better design plan because only the methods are called but the code for the methods are not shown. In LinearSystemSolver.java, there are only methods called which make reading the interface clear to the programmer. Secondly multiple inheritance, the idea of inherited-class objects to reproduce base-class behaviours, can be replicated using multiple implementations of the interface LinearSystemSolver. Multiple inheritance is useful because this allows the interface to combine more than one class. For example LinearSystemSolver uses a Vector class(Vector solve(), an extended class of Externalizable), but uses inputs from linearsystem and factory(extended classes of Serializable). In conclusion, using an interface LinearSystemSolver is useful because it makes the file highly readable for a programmer, and creates multiple inheritance.