JAMA : A Java Matrix Package

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Basic linear algebra package for Java.

User classes for real, dense matrices.

Sufficient for routine problems.

Pedagogical.

Understandable to non-experts.

Intended as the standard matrix class for Java.

Wilkinson and Reinsch

EISPACK

LINPACK

MATLAB

Six Java classes:

    Matrix

    CholeskyDecomposition

    LUDecomposition

    QRDecomposition

    SingularValueDecomposition

    EigenvalueDecomposition

```java
double[][]array =
 {{1.,2.,3},{4.,5.,6.},{7.,8.,10.}};
Matrix A = new Matrix(array);
Matrix b = Matrix.random(3,1);
Matrix x = A.solve(b);
Matrix r = A.times(x).minus(b);
double rnorm = r.normInf();
```

Not Covered:

Structured matrices (banded, sparse, ...)

Specialized decompositions ($Ax = \lambda Bx$)

Complex matrices.

General-purpose array class.

For details, see:

http://math.nist.gov/javanumerics/jama