

HP-71B Fun Linear Algebra Programs Collection

By

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The linalg71.xlsx file contains several sheets, each for a specific linear algebra algorithm implemented for the HP-71. The sheets are:

1. NAÏVE Gauss: Implements a simple version of the Gauss Elimination method, to solve a set of linear equations.
2. Gauss Jordan Elim: Implements the Gauss-Jordan elimination method, to solve a set of linear equations.
3. Gauss Jordan Elim with Pivot: Implements the Gauss-Jordan elimination method, with pivoting, to solve a set of linear equations.
4. Simple LU: Implements a simple version for the LU decomposition, to solve a set of linear equations.
5. LU with Pivots: Implements a version for the LU decomposition with pivoting, to solve a set of linear equations.
6. Determinant: Calculate the determinant of a matrix.
7. Inverse Mat: Calculate the inverse of a matrix.
8. Jacobi Iters: Implements the iterative Jacobi algorithm, to solve a set of linear equations.
9. Jacobi SOR Iters: Implements the iterative Jacobi algorithm with a relaxation factor, to solve a set of linear equations.
10. Gauss Seidel Iters: Implements the iterative Gauss-Seidel algorithm, to solve a set of linear equations.
11. GS SOR: Implements the iterative Gauss-Seidel algorithm with a relaxation factor, to solve a set of linear equations.

All the programs get their input from DATA statements. Each sheet comes with a sample set of DATA statements. You can add, delete, and edit these data statements to customize the program for your particular linear algebra calculations. To run any program, just press the RUN key.

I am also including .e71 files for the Windows-based HP-71B emulator version 1.14 by Christoph GieSelink. The VER\$ command on my emulator I used yields:

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HP71:2CDCC MATH:1A JPC:F05 MATH:2B FIT:A
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And the MEM command yields 147111. MY LISTINGS DO NOT USE ANY MODULE. I am mentioning the above information just in case you have problems loading and running the .e71 files.