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Lab Information

1   Information about MATLAB/Octave

It is easy to handle vector and matrix operations in MATLAB/Octave. You do not need to define dimensions of matrices and vectors. They are automatically given an appropriate size.

One can try different commands to see how they are interpreted by MATLAB/Octave and whether they provide the expected result. For instance, matrix A is displayed simply by writing A in the command line.

List of MATLAB/Octave commands

Write the program using any text editor (e.g. emacs), and save in a file with extension ".m", e.g. "PellesOwnSimplexmethodNr1.m". (Note that Unix distinguishes between uppercase and lowercase letters.)

Expected result	MATLAB-function
Help about <function>.	`help <function>`
Compute B^{-1}.	`inv(B)`
Solve x from $Bx = b$.	`x=B\b`
Compute $A^T y$.	`A'*y`
Component-wise $a * b$, a/b.	`a.*b`, `a./b`
Find minimum of the vector x.	`min(x)`
Find both index, i, and minimum value, v, of x.	`[v,i]=min(x)`
Indices of particular elements in the vector x.	`find( x > 0.5 )`
Number of rows, m, and columns, n, in A.	`[m,n]=size(A)`
Create $m \times n$ matrix with zero elements.	`zeros(m,n)`
The norm of the difference between vectors x and y.	`norm(x-y)`
The vector (1,2,3,4,5,6,7).	`[1:7]`
The columns in A with the indices t.	`A(:,t)`
Display 'text' on the screen.	`disp('text')`
Display the values of x on the screen.	`disp(x)`
Read a data file.	`load(input('Give data file:  ','s'))`
Save all variables in the file filename.mat.	`save filename`
Save the variables v1 v2 in filename.mat.	`save filename v1 v2`
Measure execution time.	`tic; <clause>; toc`
Repeat for $j = 1 \ldots, n$.	`for j=1:n, <clause>; end`
Extract those values in vector a that are not in vector b (the result is sorted).	`setdiff(a,b)`

While-clause.	`while e > 0,`
	`  e = e - 1;`
	`end`

If-clause.	`if i == j`
	`   a(i,j) = 2;`
	`elseif abs(i-j) == 1`
	`   a(i,j) = -1;`
	`else`
	`   a(i,j) = 0;`
	`end`