

What is MATLAB?

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= "matrix laboratory"

= a programming environment to perform computing for science and engineering applications

Sample engineering applications

- Especially useful for matrix manipulations
- Visualize EM fields in wireless communication
- Process medical images and detect tumors
- 3D image reconstruction of coronary artery
- Creating mathematical model of neurons and simulate electrical behavior
- Creating an algorithm to predict arm movements from brain signals

MATLAB windows

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- 1) Desktop
- 2) Command window
- 3) Edit/debug window
- 4) Workspace browser
- 5) Command history
- 6) Figure windows
- 7) Help browser
- 8) Current folder

Matlab search path

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Order of operations

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Variables

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Helpful commands

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- `clc` = clear command window
- `Clf` = clear current figure
- `Clear` = delete all variables in workspace
- `Who` = list variables in workspace
- `Whos` = list variables + size and data type in workspace
- `Ctrl-C` = abort command

Arrays, matrices

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Special array commands

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- Ones
- Zeros
- Linspace
- logspace

Scripts

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Saving and loading .mat files

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Save

Load