

MATLAB OVERVIEW

1. Environment

- *command window* accepts commands
- *workspace* records variables
 - `save` saves variables to disk
 - `clear` clears variables
- *current working directory* is default directory for commands and other files
 - `pwd` shows current working directory
 - `cd` changes current working directory
- *path* is a list of other places to look (directories) for commands
 - change using File/Set Path... or `pathtool`

- `help` describes commands, e.g., `help save`
- `lookfor` lists commands whose help text contains a keyword, e.g., `lookfor random`

2. Data types

- matrix
- scalar (= 1×1 matrix)
- string (= $1 \times n$ matrix)
- others: structure, structure array, cell array, inline function, object

3. Commands

- small number of built-in commands
- all other commands are programmed in M or MEX files
- commands can be *scripts* or *functions*
- typically store a related set of commands (= *toolbox*) together in a single directory

4. Control structures

- decisions: `if-elseif-else-end`, `switch-case-otherwise-end`
- loops: `for-end`, `while-end`

5. Useful features

- matrix operations
- plotting and graphics
- toolboxes: statistics, image processing, signal processing, optimization, etc.