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MATLAB

ide

Introduction to MATLAB

- Discover the MATLAB desktop and check out the Help system
- Topics
  - ➢MATLAB Desktop/IDE (Integrated Development Environment)
    - HELP
    - Basic elements

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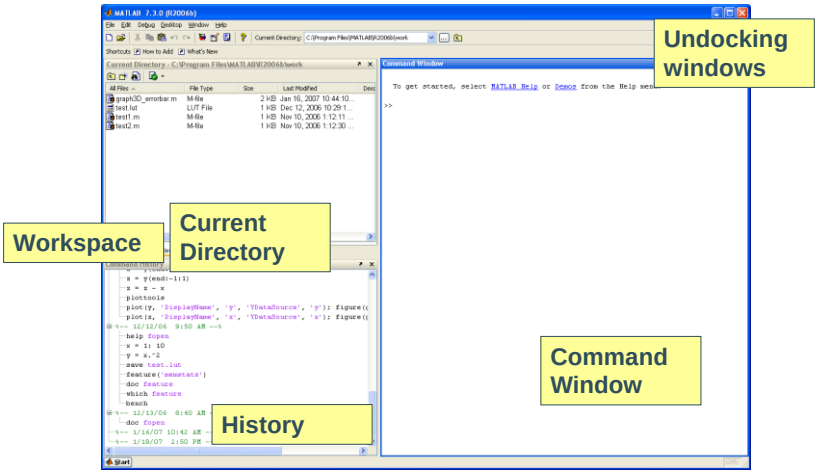
MATLAB Desktop 7.3 (2006)



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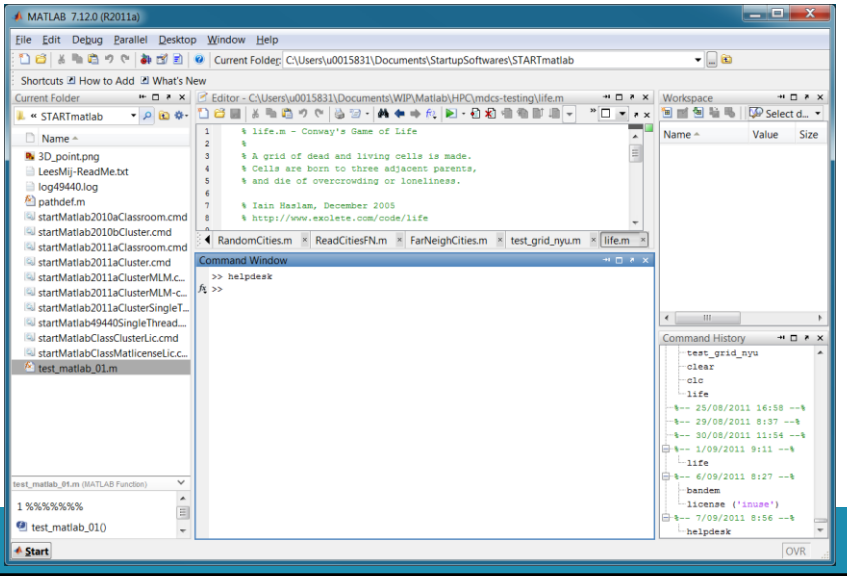
MATLAB Desktop 7.12 (2011)



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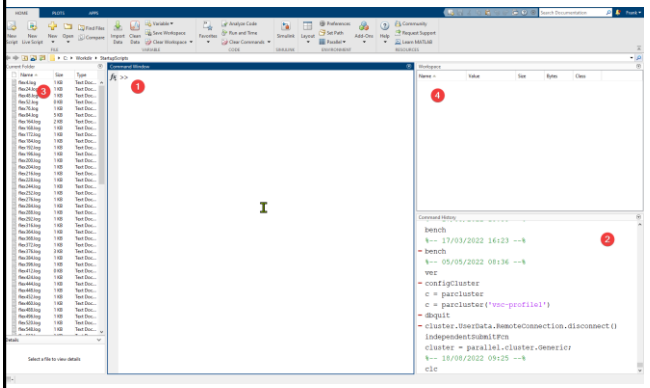
MATLAB Desktop 202na/b

- default



Window	Purpose
(1) Command Window	Main window: for running functions and entering variables
(2) Command History	Logs previously used commands
(3) Current Directory	Browser for accessing files
(4) Workspace	Provides information about the variables that are used

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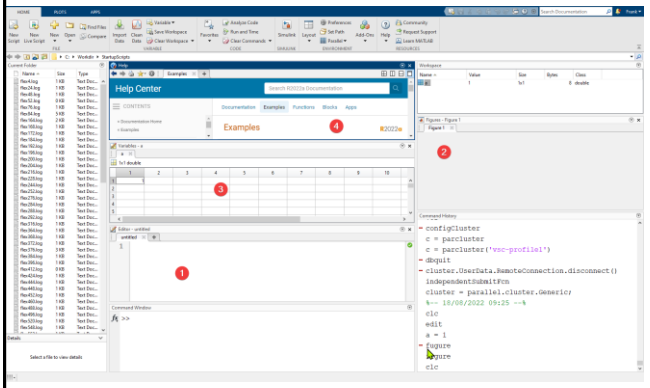
MATLAB Desktop 202na/b

- More windows can be added



Window	Purpose
(1) Editor/Debugger (edit)	Helpful in creating, modifying, and debugging MATLAB script and function files (M-files) and Live Editor
(2) Figure Window (figure)	Contains output from graphic commands
(3) Array Editor (openvar)	Browser for editing arrays
(4) Help Browser (F1)	Provides help for accessing documentation

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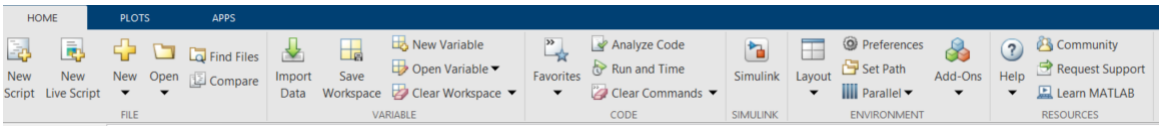
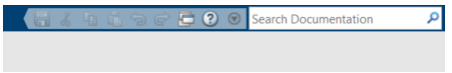
Toolstrip: upper part

- Main menu options
- Left



- Right
  - Quick access toolbar



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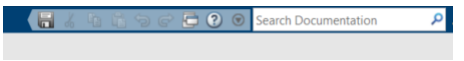
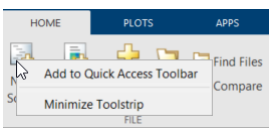
Quick Access Toolbar

- Single click access to the Toolstrip functionality you use most often.
- Any control from the Toolstrip tabs can be placed in the Quick Access Toolbar
  - Add: Right click on the control and add
  - Remove: Right click on any icon in the Quick Access Toolbar and select "Remove from Quick Access Toolbar"





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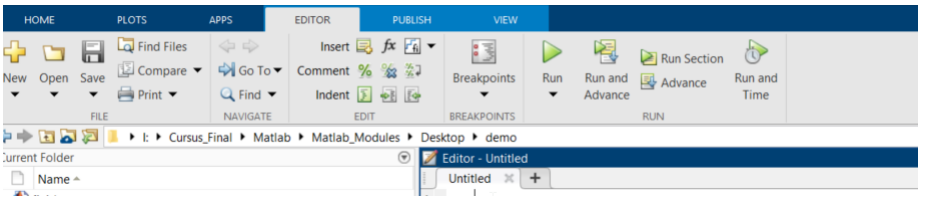
Toolstrip

- Organizes MATLAB functionality in a series of *tabs*. Tabs are divided into *sections* that contain a series of related *controls*.



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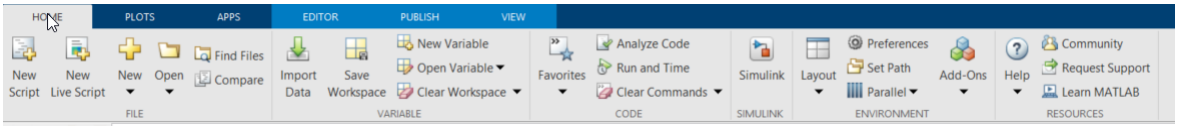
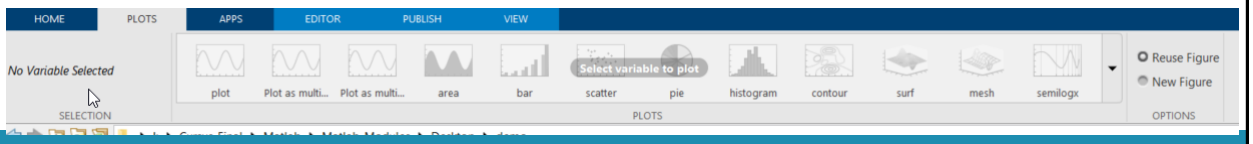
Toolstrip

Global tabs

- Home
  - general purpose operations: creating new files, importing data, Desktop layout.



- Plots
  - Interactive plotting



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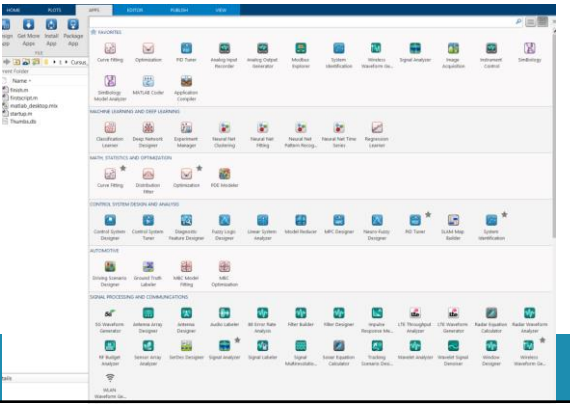
Toolstrip

- Apps
  - Interactively run MATLAB applications (Toolboxes)
  - The star symbol next to an app indicates that it is in the Favorites category (can be set)



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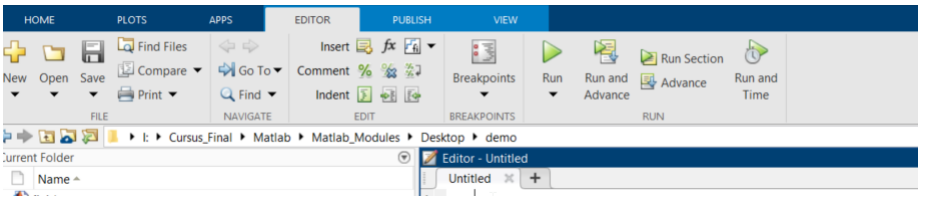
Toolstrip

- Context specific behavior
  - Depending on the task performed, the toolstrip will be adapted (e.g. Editor)



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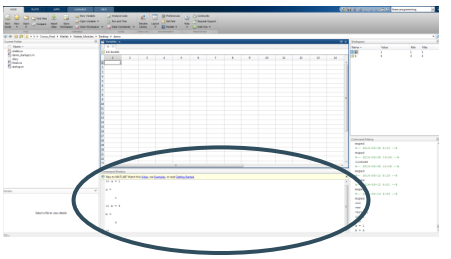
Command Window



- main working area
- run lines of code
- displays values if code is not ended with ;
- pushing ‘arrow up’ cycles through previous entries
- displays >> prompt when ready for a command
  - Will have no >> prompt when processing commands
  - Newer versions also say
    “Ready” or “Busy”
    in lower left corner of GUI

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Command Window

- Several command may be typed on the same line by typing a comma (`,`) between the commands. Pressing the Enter key will execute the commands.
- A long command can be split by typing three periods (`...`), pressing the Enter key, and continuing the command on the next line.
- Run external programs from the MATLAB Command Window.
  The exclamation point character (!) is a shell escape and indicates that the rest of the input line is a command to the operating system.

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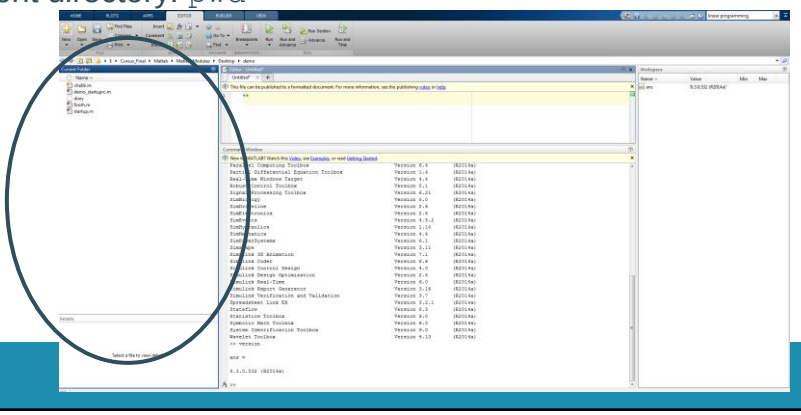
Current Folder

- Your current directory
- Browser for accessing files
- Check the current directory: `pwd`



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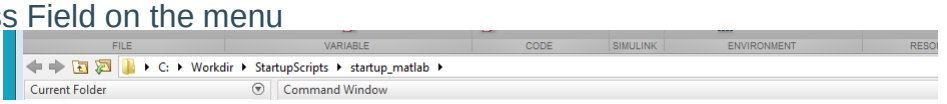
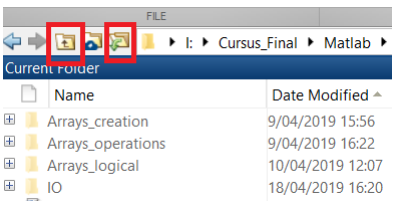
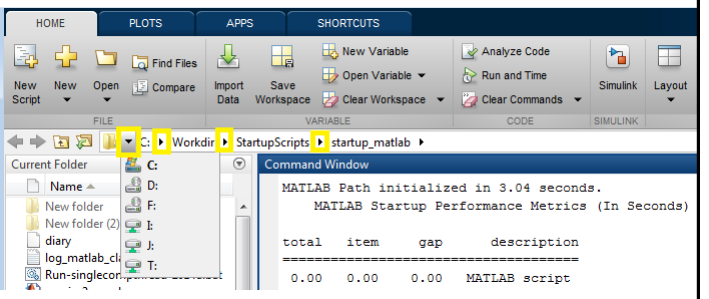
Change folder

- Change directory: `cd`
- Use the Address Field on the menu



- Select the disk from dropdown





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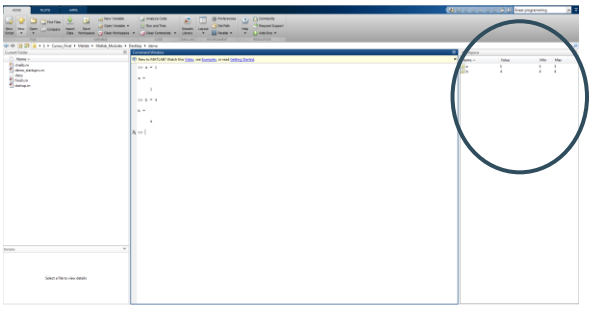
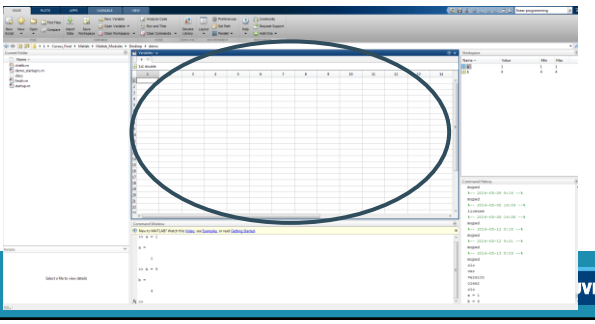
Workspace/Array editor

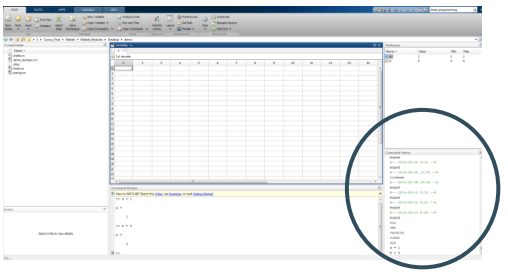
- Lists variables from code and experiments executed
- double-click the variable opens a window showing the values
- values can be changed interactively





Command History

- displays a log of the statements most recently run in the Command Window
- user can copy from this list one or more lines of code and paste it into the command window
- saves history (up to 20k)
- Stored in `prefdir history.m`



Desktop layout

- Layout can be changed
- Different windows can be shown (or not)
- Windows can be docked/undocked
- Home > Environment Layout

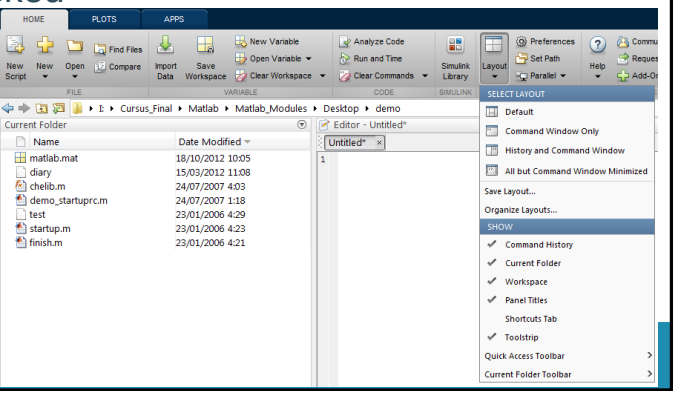


Figure window

- *Non-default window*
- where the graphics results are put
- i.e. `plot`
- as many figure windows can be opened up to memory limit

```
x = 1:10;
y = sin(x);
plot(x,y);
```

Editor

- MATLAB has a built in editor, to start it:
  - `edit`
    or to edit an existing code
    `edit filename.m`
  - Select from Home menu, click icon to start editing new file (`ctrl+n`)
  - Select file from directory (double click)

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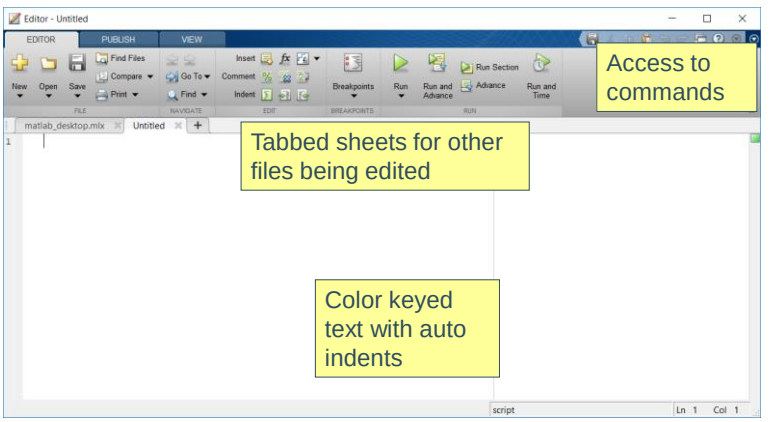
Editor



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Demo / recap

- Different windows
  - Default (command window, workspace, current folder, history)
  - Extra (editor, array editor, help, figure)
- Toolstrip
- Layout
- Check the screencast: *matlab_desktop_a_first_view*

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