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MATLAB
Unit 2-Lecture 4

BTech (CSBS) -Semester VII

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*few figures/content have been prepared/referred from internet source/books

Workspace

- Managing the workspace
- Keeping track of your work session,
- Entering multiple statements per line

Workspace Browser

- The Workspace browser enables you to view and interactively manage the contents of the workspace in MATLAB®.
- For each variable or object in the workspace, the Workspace browser also can display statistics, when relevant, such as the minimum, maximum, and mean.
- You can edit the contents of scalar (1-by-1) variables directly in the Workspace browser. Right-click the variable and select Edit Value.
- To edit other variables, double-click the variable name in the Workspace browser to open it in the Variables editor.

Workspace Browser

Workspace

Name	Value	Class	Min	Max	Mean
A	*4x4 double*	double	1	16	8.5000
B	[1;2;3;4]	double	1	4	2.5000
filename	'myfile.txt'	char			
patient	*1x1 struct*	struct			
t	'Hello'	char			
val1	*2x3 cell*	cell			
val2	[17,21,42]	double	17	42	26.6667
x	325	double	325	325	325
y	[9900,26025,39600]	uint32	9900	39600	
z	-Inf	double	-Inf	-Inf	-Inf

Open the Workspace Browser

To open the Workspace browser if it is not currently visible, do one of the following:

- MATLAB Toolstrip: On the **Home** tab, in the **Environment** section, click **Layout**. Then, in the **Show** section, select **Workspace**.

- MATLAB command prompt: Enter workspace.

You also can minimize the Workspace browser by collapsing the panel in which it resides. eg. if the Workspace browser is in the left side panel, click the button at the bottom left corner of the panel to collapse the panel. To restore the panel, click the button. If the Workspace browser is in the left or right side panel and the panel contains multiple tools, you also can minimize it by clicking the button to the left of the Workspace browser title bar.

Workspace Variables

Functions

`load`	Load variables from file into workspace
`save`	Save workspace variables to file
`matfile`	Access and change variables in MAT-file without loading file into memory
`disp`	Display value of variable
`formattedDisplayText`	Capture display output as string
`who`	List variables in workspace
`whos`	List variables in workspace, with sizes and types
`clear`	Remove items from workspace, freeing up system memory
`clearvars`	Clear variables from memory
`openvar`	Open workspace variable in Variables editor or other graphical editing tool
Workspace Browser	Open Workspace browser to manage workspace

Save Workspace Variables

There are several ways to save workspace variables interactively:

- To save all workspace variables to a MAT-file, on the **Home** tab, in the **Variable** section, click **Save Workspace**.

- To save a subset of your workspace variables to a MAT-file, select the variables in the Workspace browser, right-click, and then select **Save As**. You also can drag the selected variables from the Workspace browser to the Current Folder browser.

- To save variables to a MATLAB script, click the **Save Workspace** button or select the **Save As** option, and in the **Save As** window, set the **Save as type** option to **MATLAB Script.** Variables that cannot be saved to a script are saved to a MAT-file with the same name as that of the script.

Save Workspace Variables

You also can save workspace variables programmatically using the **save** function.

```
save('june10')
```

To save only variables A and B to the file june10.mat, use the command

```
save('june10', 'A' , 'B')
```

Load Workspace Variables

- To load saved variables from a MAT-file into your workspace, double-click the MAT-file in the Current Folder browser.

- To load a subset of variables from a MAT-file on the **Home** tab, in the **Variable** section, click **Import Data**. Select the MAT-file you want to load and click **Open**. You also can drag the desired variables from the Current Folder browser Details panel of the selected MAT-file to the Workspace browser. The Details panel is not available in MATLAB Online.

- To load variables saved to a MATLAB script into the workspace, simply run the script.

Load Workspace Variables

You also can load saved variables programmatically, use the load function.

```
load('durer')
```

To load variables X and map from the file durer.mat

```
load('durer', 'X', 'map')
```

Keep a track of work

Write to a Diary File

To keep an activity log of your MATLAB® session, use the **diary** function. diary creates a verbatim copy of your MATLAB session in a disk file (excluding graphics).

entering multiple statements per line

- **Enter Multiple Lines Without Running Them**
- To enter multiple lines before running any of them, use **Shift+Enter** or **Shift+Return** after typing a line. This is useful, for example, when entering a set of statements containing keywords, such as if ... end. The cursor moves down to the next line, which does not show a prompt, where you can type the next line. Continue for more lines. Then press **Enter** or **Return** to run all of the lines.

- This allows you to edit any of the lines you entered before you pressing **Enter** or **Return**.

- **Entering Multiple Functions in a Line**
- To enter multiple functions on a single line, separate the functions with a **comma** (,) or **semicolon** (;). Using the semicolon instead of the comma will suppress the output for the command preceding it. For example, put three functions on one line to build a table of logarithms by typing

```
format short; x = (1:10)'; logs = [x log10(x)]
```

and then press **Enter** or **Return**. The functions run in **left-to-right order**.

entering multiple statements per line

- **Entering Long Statements**
- For items in single quotation marks, such as strings, you must complete the string in the line on which it was started. For example, completing a string as shown here

```
headers = ['Author Last Name, Author First Name, ' ...
'Author Middle Initial']
results in

headers =
Author Last Name, Author First Name, Author Middle Initial
```