Matlab Interactive (Keyboard & Screen) Input and Output (I/O) Summary
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Matlab provides a variety of functions for interactive user input and output. Even the simplest programs generally require some interactive input from the user and display their results. Non-graphical program send their output directly to Matlab's command window (or the system's *stdout* stream in the case of compiled Matlab programs). The simplest graphical programs display a dialog box for input and send their output to a message box.

Commonly Used Non-graphical I/O Functions

input – Requests, waits for and evaluates user input and assigns the result to the specified variable. A prompt string telling the user what is expected is generally passed to the input function and displayed. This string may contain the special character code \n (newline) and possibly others, but not most TeX codes (like \it). By default, *input* evaluates whatever is entered as a numerically (including evaluating any entered functions or commands). Use the *s* option to force *input* to evaluate the entered quantity as literal text (a string).

disp – Displays the contents of the specified variable without displaying the variable name. If the variable is a string, the content of the string is displayed. Special character and formatting codes like \n and \it are not translated.

Commonly Used Simple Graphical Message and Dialog Box Functions

inputdlg – Creates and displays a modal (blocking, see note below) dialog box, displays one or more specified prompts and returns user input as a cell array of strings.

msgbox – Displays the contents of the specified string or cell array of strings in a simple non-modal (non-blocking, see note below) message box with an okay button. By default, the message text is not interpreted but an option allows the use of *TeX* to display special symbols and formatting (\ codes).

Less Commonly Used Non-Graphical Output Functions

warning – Displays the specified like the *disp* function, except that with warning, message display can be suppressed.

error – Displays the specified message and aborts the function containing the call.

type – Displays the contents of the specified text file.

echo – Controls whether Matlab commands are displayed during execution. Turning echo on can be useful for debugging but generally results in very slow program execution.

Less Commonly Used Simple Graphical Message and Dialog Box Functions

dialog – Creates and displays a dialog box (this is the most general case), errordlg – Creates and displays an error dialog box, *export2wsdlg* – Exports variables to workspace, *helpdlg* – Creates and displays a help dialog box, *listdlg* – Creates and displays a list-selection dialog box, *printdlg* – Creates and displays a print dialog box, *printpreview* – Previews figure to print, *questdlg* – Creates and displays a question dialog box, *uigetdir* – Displays the standard dialog box for selecting a directory, *uigetfile* – Displays the standard dialog box for retrieving files, *uigetpref* – Creates and displays a dialog box for retrieving user preferences, *uiopen* – Creates and displays a file selection dialog box with appropriate file filters, *uiputfile* – Displays the standard dialog box for saving files, *uisave* – Displays the standard dialog box for saving workspace variables, *uisetcolor* – Displays the standard dialog box for setting an object's color, *uisetfont* – Displays the standard dialog box for setting object's font, *waitbar* – Creates and displays a wait bar and *warndlg* – Creates and displays a warning dialog box.

Additional Information

It is often necessary to convert numeric values stored in variables to text strings. For example, some Matlab output functions, like *msgbox,* can only display string data. It is also often desirable to combine numeric values with some explanatory text (like the values' units) prior to display using the *disp* function. This can be done with the *int2str*, *num2str* and *sprintf* functions.

Graphical message and dialog boxes can be either modal or non-modal. A modal box prevents the user from interacting with other windows before responding. To block MATLAB program execution as well, use the *uiwait* function. For more information about modal dialog boxes, see *WindowStyle* in the MATLAB Figure Properties.

Sources

- Matlab Help Entry – Input/Output::Programming Tips
- Matlab Help – Function Reference – Creating Graphical User Interfaces section – Predefined Dialog Boxes subsection.
- Individual Function Help Entries