MATLAB®

Live Scripts as Plain Text (.m) Files Beta
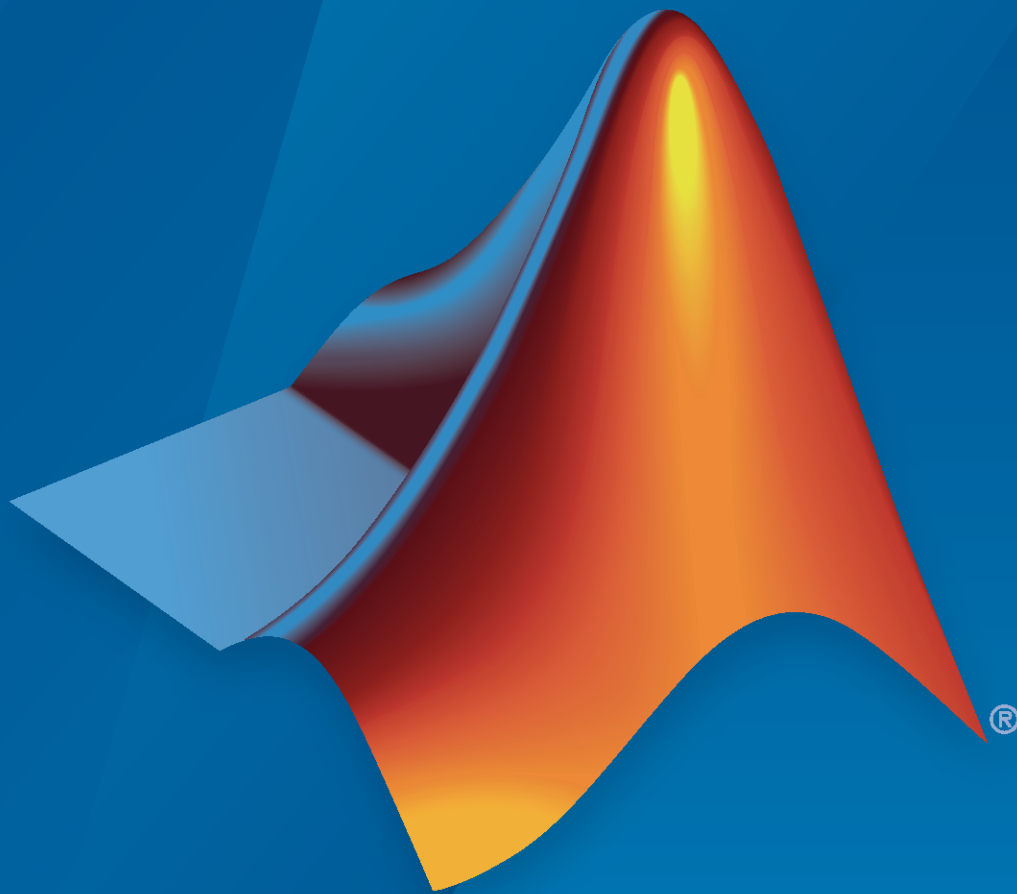
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Revision History

Contents

Live Scripts as Plain Text (.m) Files Beta

General Considerations

This is the documentation for the new Live Scripts as Plain Text (.m) feature currently in development. MathWorks® provides this limited release only for gathering your feedback on this feature. Do not integrate this feature and this software with other products. Do not use this build for production or development activities.

This release contains a snapshot of current development efforts. This software has not completed general release testing and is provided for exploratory use only. Software development is ongoing, and the documentation provided is in progress. This software and documentation is made available without any implications of the existence or nonexistence of bugs.

The feature names, user interface, and saved plain text file format are subject to change.

Getting Started

To get started using the Live Scripts as Plain Text (.m) Files Beta, follow these steps:

1 Install MATLAB® R2024a here: https://www.mathworks.com/downloads/.

2 Download and install the New Desktop for MATLAB (Beta) add-on here: https://www.mathworks.com/matlabcentral/fileexchange/119593-new-desktop-for-matlab-beta.

3 Download and run the MATLAB code files to turn on the Live Scripts as Plain Text (.m) Files Beta using the link provided.

Known Issues and Limitations in this Beta

- The `help` or `doc` functions may display unexpected content for live functions saved using the plain text file format.

- When comparing two live scripts or functions saved using the plain text file format, the Comparison Tool compares the files as plain text files instead of live scripts on functions.

- Some document functionality may be unavailable for live scripts and functions saved using the plain text format.
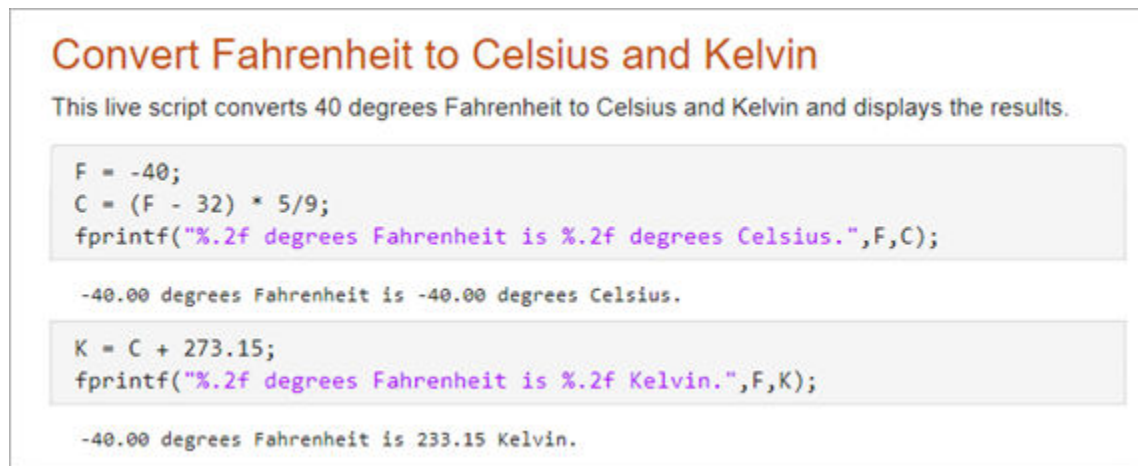
Create and Save Live Scripts as Plain Text (.m) Files

In the Live Scripts as Plain Text (.m) Files Beta, live scripts and functions are stored using the plain text file format (`.m`) by default. Live scripts saved using the plain text file format behave just like live scripts saved using the Live Code file format (`.mlx`). They open in the Live Editor and can contain code, output, and formatted text. They also can include interactive controls and tasks.

Plain Text File Format (.m)

The Live Editor uses custom markup to save formatted text, generated output, interactive controls, and tasks as plain text. Depending on the feature being saved, the Live Editor adds custom markup inline with the related code or text line, to the end of the live script file in a section labeled `appendix`, or both.

For instance, this live script, `fahrenheitconverter.m`, is saved using the plain text file format. When you open `fahrenheitconverter.m` in MATLAB, it opens in the Live Editor.

Convert Fahrenheit to Celsius and Kelvin

This live script converts 40 degrees Fahrenheit to Celsius and Kelvin and displays the results.

```
F = -40;
C = (F - 32) * 5/9;
fprintf("%.2f degrees Fahrenheit is %.2f degrees Celsius.",F,C);
```

```
-40.00 degrees Fahrenheit is -40.00 degrees Celsius.
```

```
K = C + 273.15;
fprintf("%.2f degrees Fahrenheit is %.2f Kelvin.",F,K);
```

```
-40.00 degrees Fahrenheit is 233.15 Kelvin.
```

When you open `fahrenheitconverter.m` in a third party text editor, you can see the resulting markup.

```
1   %#text
2   % # Convert Fahrenheit to Celsius and Kelvin
3   %
4   % This live script converts 40 degrees Fahrenheit to Celsius and Kelvin and
5   % displays the results.
6
7   F = -40;
8   C = (F - 32) * 5/9;
9   fprintf("%.2f degrees Fahrenheit is %.2f degrees Celsius.",F,C);
10  K = C + 273.15;
11  fprintf("%.2f degrees Fahrenheit is %.2f Kelvin.",F,K);
12
13  %#appendix
14  %#metadata:view{"layout":"inline"}
```

Benefits to Plain Text File Format (.m)

There are several benefits to saving live scripts using the plain text file format:

- **Improved integration with source control** — You can use external source control tools to compare and merge live scripts saved using the plain text file format. For more information, see the Source Control section at the end of this document.
- **Files open in external code editor** — You can open live scripts saved using the plain text file format in any external text or code editor that supports plain text files.
- **Increased transparency** — Files saved using the Live Code file format (.mlx) can sometimes trigger security concerns. Files saved using the plain text file format mostly do not trigger security concerns. One exception to this may be if the live script contains images and plots, which are saved as base64 (ascii-binary) strings in the plain text file.

Create Live Scripts

To create a live script, go to the **Home** tab and click **New Live Script**. By default, the Live Editor creates the live script using the plain text file format (.m).

Add code to your live script. For example, add this code that converts -40 Fahrenheit to Celsius and to Kelvin.

```
F = -40;
C = (F - 32) * 5/9;
fprintf("%.2f degrees Fahrenheit is %.2f degrees Celsius.",F,C);

K = C + 273.15;
fprintf("%.2f degrees Fahrenheit is %.2f Kelvin.",F,K);
```

```
1    F = -40;
2    C = (F - 32) * 5/9;
3    fprintf("%.2f degrees Fahrenheit is %.2f degrees Celsius.",F,C);
4    K = C + 273.15;
5    fprintf("%.2f degrees Fahrenheit is %.2f Kelvin.",F,K);
```

You also can add formatted text, hyperlink, images and images to your live script. For example, add a title and some introductory text:

1. Place your cursor at the top of the live script and, in the **Live Editor** tab, select **Text** . A new text line appears above the code.

2. Click the Select Style button and select `Title`.

3. Add the text `Convert Fahrenheit to Celsius and Kelvin`.

4. Press **Enter** to move to the next line.

5. Enter the text `This live script converts 40 degrees Fahrenheit to Celsius and Kelvin and displays the results`.

Notice that when you add the title and text above the code, the line numbers next to each code line changes. This is because in live scripts saved using the plain text file format, each line of text accounts for one or more lines in the saved plain text file.

Convert Fahrenheit to Celsius and Kelvin

This live script converts 40 degrees Fahrenheit to Celsius and Kelvin and displays the results.

```
7    F = -40;
8    C = (F - 32) * 5/9;
9    fprintf("%.2f degrees Fahrenheit is %.2f degrees Celsius.",F,C);
10   K = C + 273.15;
11   fprintf("%.2f degrees Fahrenheit is %.2f Kelvin.",F,K);
```
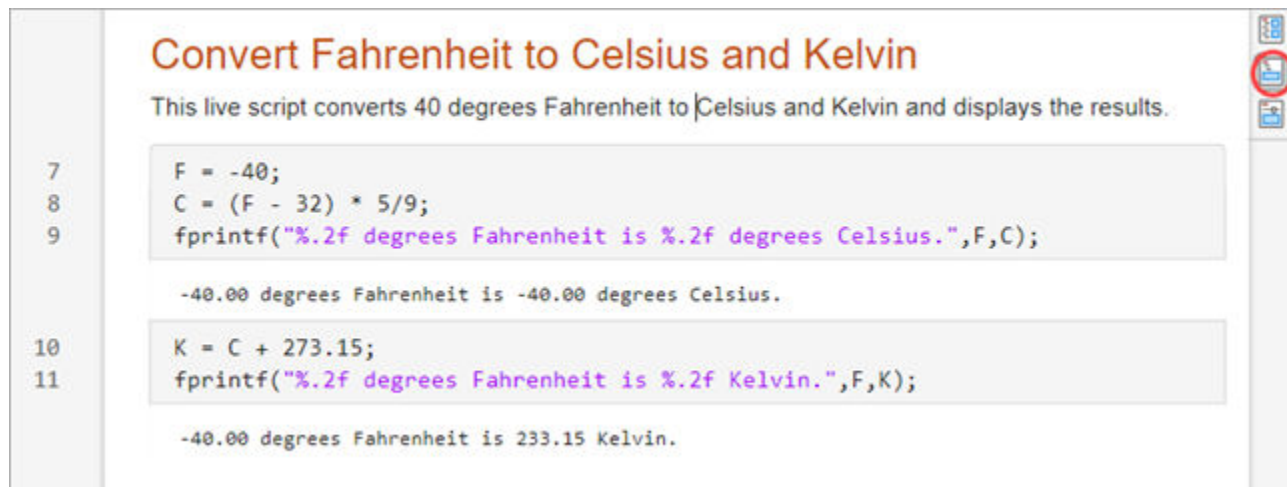
Save and Run Live Scripts

When you save your live script, the Live Editor saves it as a plain text files with a `.m` extension. For example, go to the **Live Editor** tab, click **Save**, and enter the name `fahrenheitconverter`. The Live Editor saves the live script as `fahrenheitconverter.m` using the plain text file format. To save your live script using the Live Code file format (`.mlx`), when you save your file, select `MATLAB Live Code File (*.mlx)` as the **Save as type**.

To run the live script, click the vertical striped bar to the left of the code. Alternatively, go to the **Live Editor** tab and click **Run**. By default, the Live Editor displays output to the right of the code.

Convert Fahrenheit to Celsius and Kelvin

This live script converts 40 degrees Fahrenheit to Celsius and Kelvin and displays the results.

```
7    F = -40;
8    C = (F - 32) * 5/9;
9    fprintf("%.2f degrees Fahrenheit is %.2f degrees Celsius.",F,C);       -40.00 degrees Fahrenheit is -40.00 degrees Celsius.
10   K = C + 273.15;
11   fprintf("%.2f degrees Fahrenheit is %.2f Kelvin.",F,K);|                -40.00 degrees Fahrenheit is 233.15 Kelvin.
```

To change the layout of the live script, go to the **View** tab, and in the **View** section, select from the available options. You also can select one of the layout buttons at the top right of the live script. For example, run `fahrenheitconverter.m` and select the **Output inline** button to the right of the live script to display each output underneath the line that creates it.

Convert Fahrenheit to Celsius and Kelvin

This live script converts 40 degrees Fahrenheit to Celsius and Kelvin and displays the results.

```
7    F = -40;
8    C = (F - 32) * 5/9;
9    fprintf("%.2f degrees Fahrenheit is %.2f degrees Celsius.",F,C);
```

```
     -40.00 degrees Fahrenheit is -40.00 degrees Celsius.
```

```
10   K = C + 273.15;
11   fprintf("%.2f degrees Fahrenheit is %.2f Kelvin.",F,K);
```

```
     -40.00 degrees Fahrenheit is 233.15 Kelvin.
```

Save Existing Live Scripts as Plain Text

If you have an existing live script saved using the Live Code file format (`.mlx`), you can save it as a new live script using the plain text file format (`.m`):

1   On the **Live Editor** tab, in the **File** section, select **Save > Save As**.
2   In the dialog box that appears, select `MATLAB Code File (*.m)` as the **Save as type**.
3   Enter a different name than the original file name. This avoids shadowing issues.
4   Click **Save**.

Source Control

When using external source control tools, you can compare and merge live scripts saved using the plain text file format directly from the tool. This is different from live scripts saved using the Live Code file format (`.mlx`), which can only be compared using the MATLAB Comparison tool.

For example, in GitLab®, when you add a live script saved using the plain text file format to a repository, you can see the differences between each revision of the file.

```
⌄  CFE1/group2/QuantityConversion.m                                        +10 −5    💬    View file @ 6b49b7ef
...    ...    @@ -10,32 +10,37 @@
10     10     % Convert temperature from degrees Fahrenheit to degrees Celsius Formula
11     11     % for converting Fahrenheit to Celsius: C = (F - 32) × 5/9
12     12
13            - F = -123;
       13     + F = -143;
14     14     C = convertToCelsius(F);
15     15     fprintf('%.2f degrees Fahrenheit is %.2f degrees Celsius.',F,C); %#output:C1F51D98
16     16     %%
17     17     %#text %#text:anchor:828f
18     18     % ## Convert temperature from degrees Celsius to Kelvin
19     19     %
20            - % Formula for converting Celchius to Kelvin: K = Cel \+ 273\.15
       20     + % Formula for converting Celcius to Kelvin: K = Cel \+ 273\.15
21     21
22            - Cel = 355;
       22     + Cel = 400;
23     23     K = Cel + 273.15;
24     24     fprintf('%.2f degrees Celcius is %.2f Kelvin.',Cel,K); %#output:A8F086F7
25     25     %%
26     26     %#text %#text:anchor:3dc8
27     27     % ## function for conversion
       28     + %
       29     + % $C=\\left(F\-32\\right)\*\\frac{5}{9}${"editStyle":"visual"}
28     30
```

Note Some external source control tools have limitations around file size that may prevent the comparison of live scripts saved using the plain text file format:

- GitLab and GitHub® throw an error and do not display the differences in a file if the file size is too big.
- Perforce® always tries to display the differences, but may become unresponsive if the file size is too big. To avoid Perforce becoming unresponsive, you can try disabling the Show Inline Differences option.

For more information, see the documentation for the source control tool you are using.