MathWorks® R2024a

What's New in MATLAB® R2024a?

Environment

Live Editor Controls
Add date pickers to live scripts
Add a date picker to your live script to select a date interactively. To add a date picker, go to the Live Editor tab, and in the Code section, select Control > Date Picker. For more information, see **Add Interactive Controls to a Live Script**.

```
startDate =      25-Oct-2023  ▾  ;
```

Editor Indenting:
Configure automatic indenting behavior
You can configure the behavior of automatic indenting in the Editor and Live Editor. For example, you can specify whether automatic indenting formats the entire document and whether it adds white space to empty lines.

```
s = settings;
s.matlab.editor.indent.SmartIndentEntireDocument.PersonalValue = 1;
```
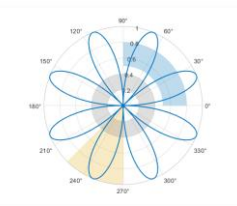
For more information, see **matlab.editor Settings**.

Apps & Graphics
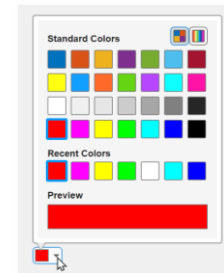
Polar Plots
Filled regions in polar coordinates
Create different types of filled regions in polar coordinates using the **thetaregion**, **radiusregion**, and **polarregion**

uicolorpicker
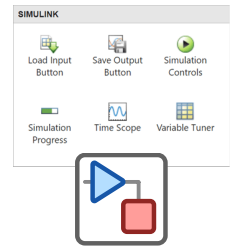**Add and configure color picker components**
Use the **uicolorpicker** function or, in App Designer, drag a color picker UI component.

App Designer
Create App for Simulink Model
Interactively build a custom app that interfaces with a Simulink® model by using App Designer. For more information, see **Create App for Simulink Model**.

Language and Programming

Local Functions
Define functions anywhere in scripts and live scripts
Local functions can be added anywhere in scripts & live scripts except within conditional contexts, such as if statements or for loops.
For more information, see **Add Functions to Scripts**.

createArray Function
Generate arrays of specified class and sizeControl
The **createArray** function enables you to create arrays of almost any MATLAB class and size.

```
S = createArray(1,5,"single")

S = 1x5 single row vector

     0     0     0     0     0
```

MATLAB backgroundPool Function
save function supported in background threads
Use the **save** function in thread-based environments, including the MATLAB **backgroundPool**.

MATLAB & Python

MATLAB tables and Python Pandas DataFrames
You can now pass MATLAB tables or timetables directly to Python® functions in MATLAB. MATLAB automatically converts the MATLAB table or timetable to a Python Pandas DataFrame.

```
T = table(df);
TT = timetable(df);
```

Interactively run Python code with Run Python Live Editor Task
To add the task to a live script in the Live Editor, click **Task** on the **Live Editor** tab and select the **Run Python Code** icon.

Convert between MATLAB and Python dictionaries
You can now pass MATLAB dictionaries directly to Python functions in MATLAB. Also, you can convert a Python dict to a MATLAB dictionary using the dictionary function. For more information, see **Use Python Dictionaries in MATLAB**.

```
pyDict = py.dict({{10,1},{20,2},{30,3}});
d = dictionary(pyDict);
```