

What's New in MATLAB R2022b?

Language & Programming

Dictionary

Dictionary object: Map unique keys to values and make it easy to look up efficiently

Dictionaries are useful for fast lookup of values in a larger set. A **dictionary** stores data as values, which can be accessed using corresponding unique keys. In almost all use cases, dictionary performs faster than **containers.Map**.

```
d = dictionary(names,wheels)

d =
    dictionary (string → double) with 3 entries:

    "Monocycle" → 1
    "Bicycle"   → 2
    "Tricycle"  → 3
```

Output argument validation

Validate output arguments in functions and class methods

You can now define - already possible for inputs - **output argument blocks** for functions and class methods. Use many of the available argument validation techniques on output arguments, including size and data type restrictions as well as validation functions.

```
function r = realPolyRoots(p)
    arguments (Input)
        p (1,3)
    end

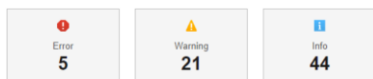
    arguments (Output)
        r {mustBeReal}
    end

    r = roots(p);
end
```

Code Analyzer App

Identify code issues

Now available as **an app**. Identify issues in code and implement suggested fixes when possible.

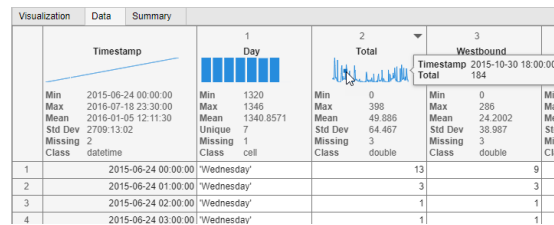


Data Analysis

Data Cleaner App

Clean data in a table & view sparklines and summary statistics

The app **Data Cleaner** now supports importing and cleaning data in a table and **displays sparklines and summary statistics** to quickly visualize and interpret the data in each table or timetable variable.



Big Data

Parquet files containing nested structured data

Write nested table and timetable variable to Parquet files using **parquetwrite**. Read nested data from Parquet files as nested tables using **parquetread/parquetDatastore**.

SequentialDatastore Object: Concatenate datastores vertically

Vertically concatenate datastores into a **SequentialDatastore** object using the **combine** function.

Software Development Tools

Build Tool

Create and run software-build tasks

You can use a **standard programming interface** to create and run software-build tasks in a uniform and efficient way. For example, you can create tasks that identify **code issues**, run tests, and package a toolbox in a single build file in your project root folder, and then invoke the build tool to run these tasks.

External Language Interface

Python

Version 3.10 support

MATLAB now **supports CPython 3.10**, in addition to existing support for 2.7, 3.8 and 3.9.

Scalar logical and numeric conversion functions

Use MATLAB functions to convert logical and numeric **Python data types to MATLAB types**.

Apps & Graphics

ClickedFcn and

DoubleClickedFcn Callbacks

Program a response to a user clicking or double-clicking

Use **ClickedFcn** and **DoubleClickedFcn** callback properties to program a response to a user clicking and double-clicking a UI component. You can specify both of these callbacks for tree, list box, and table UI components in App Designer and apps created using the **uifigure** function.

Uiimage Function

Create an image hyperlink

To open a web address when a user **clicks an image** in your app, specify the URL property of the image component created using the **uiimage** function.

Performance

Improved app startup

Apps created in **App Designer** and using the **uifigure** function start up faster in R2022b than in R2022a.

Graphics

Boxchart Function: Specify the box edge color and box median line color

The **boxchart** function now includes options for the box edge color and box median line color.

