



Oprogramowanie
Naukowo-Techniczne
sp. z o.o.

23.05.2024 r.

Tworzenie interaktywnych aplikacji

MATLAB App Designer

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Kursy online do samodzielnej nauki



MATLAB Onramp

14 modules | 2 hours | Languages

Get started quickly with the basics of MATLAB.



Object-Oriented Programming Onramp

4 modules | 2 hours | Languages

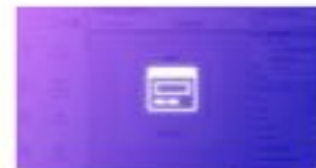
Learn the basics of using object-oriented programming in MATLAB to model real-world objects and manage software complexity.



Simulink Onramp

14 modules | 2 hours | Languages

Get started quickly with the basics of Simulink.

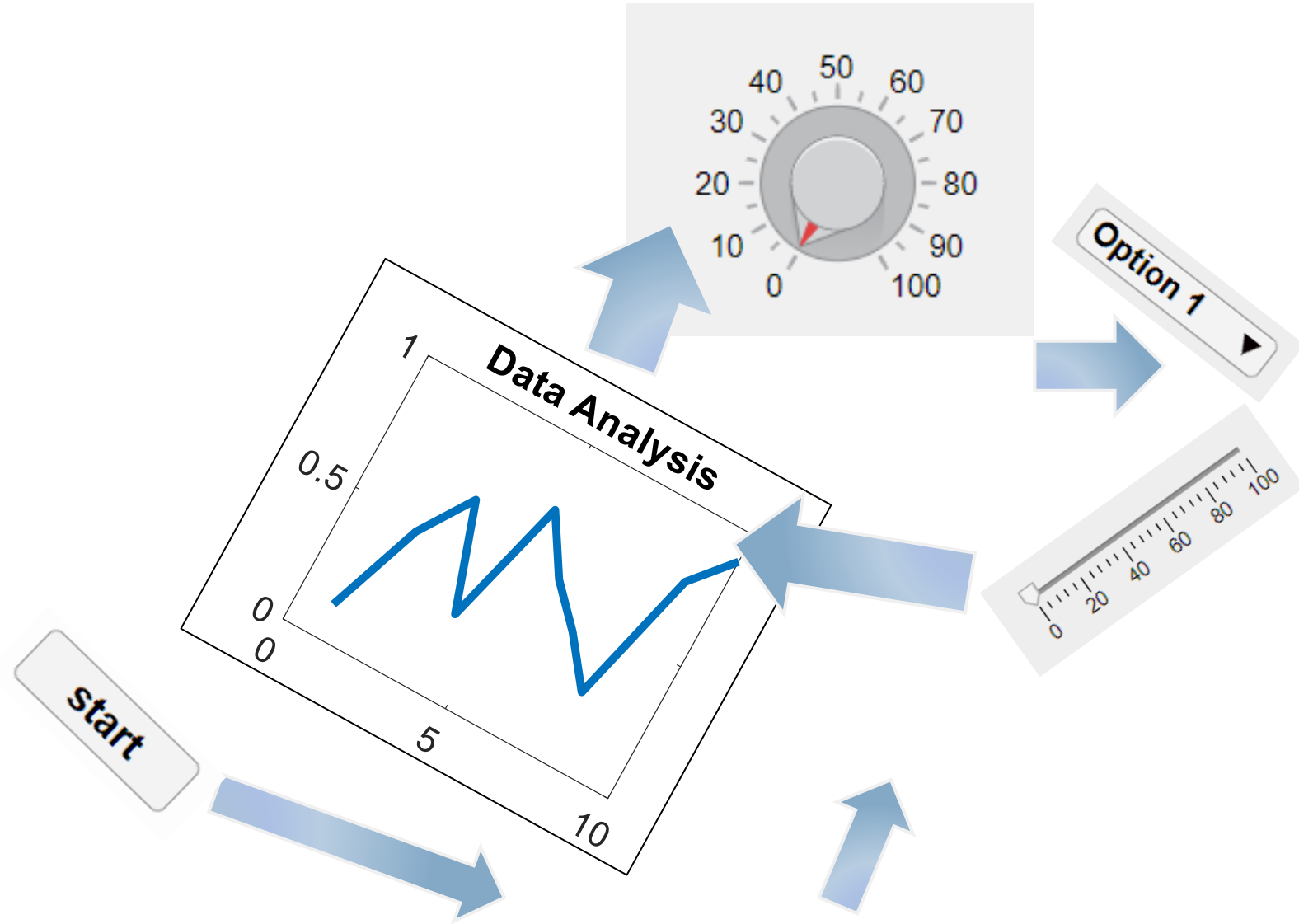


App Building Onramp

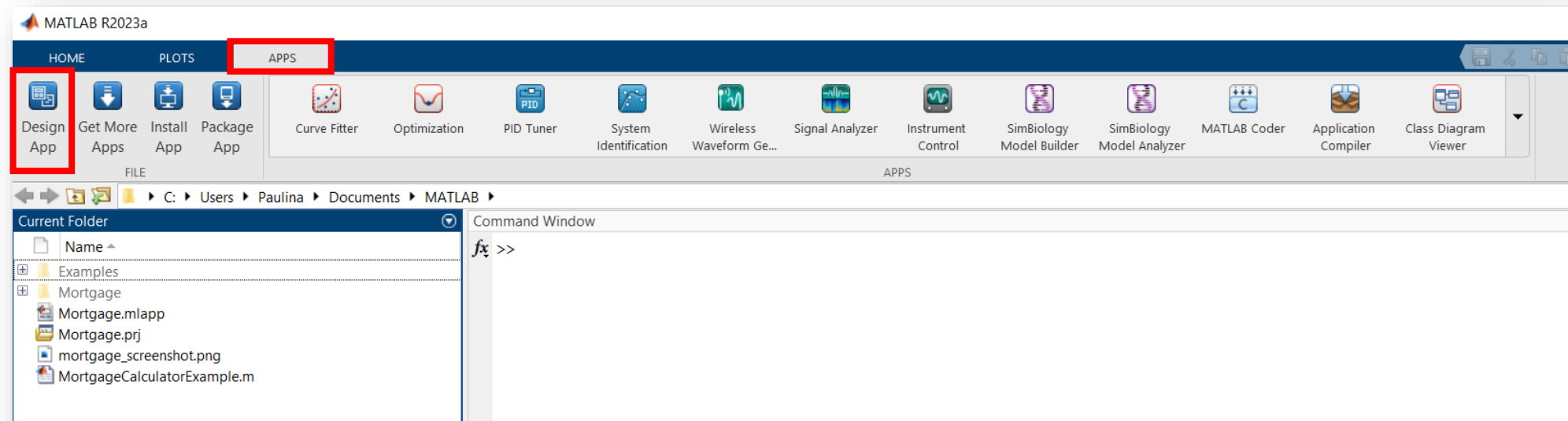
4 modules | 1 hour | Languages

Learn effective ways to develop applications in MATLAB using App Designer.

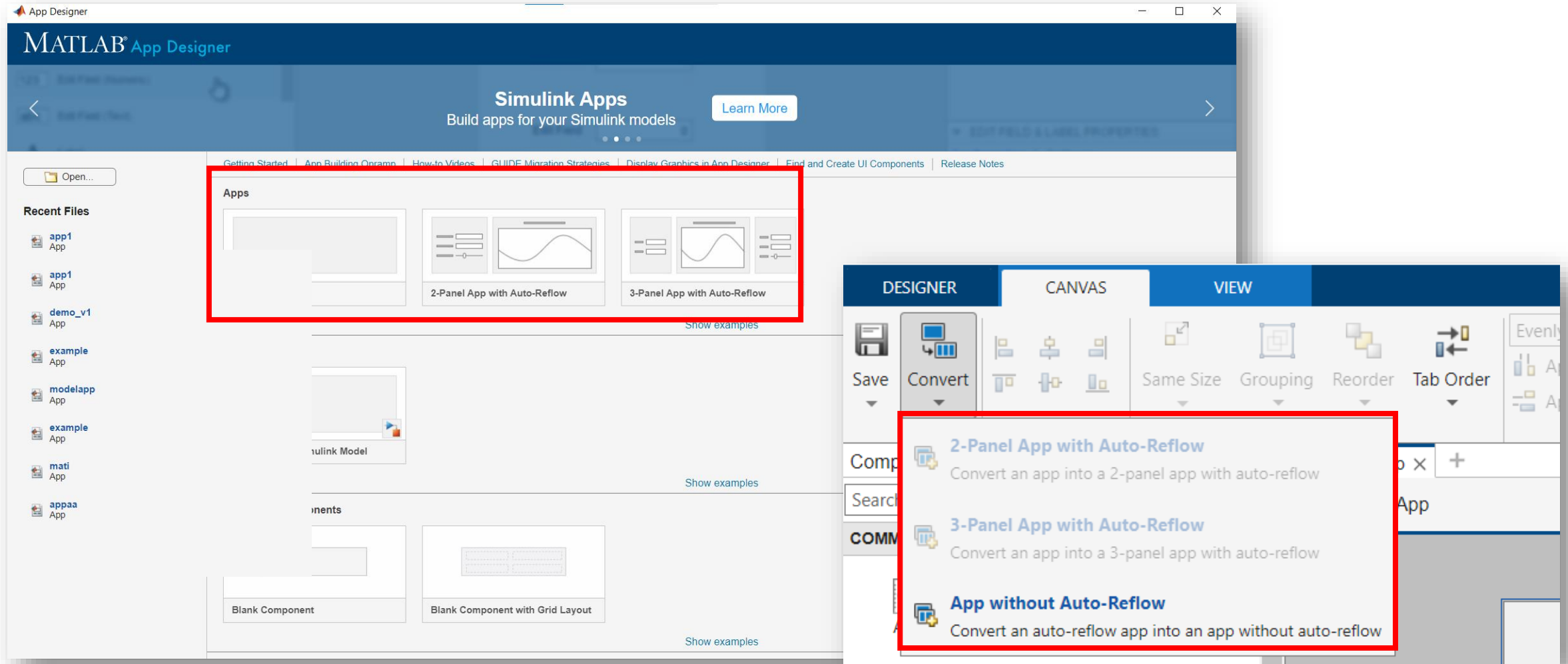
Od czego zacząć?



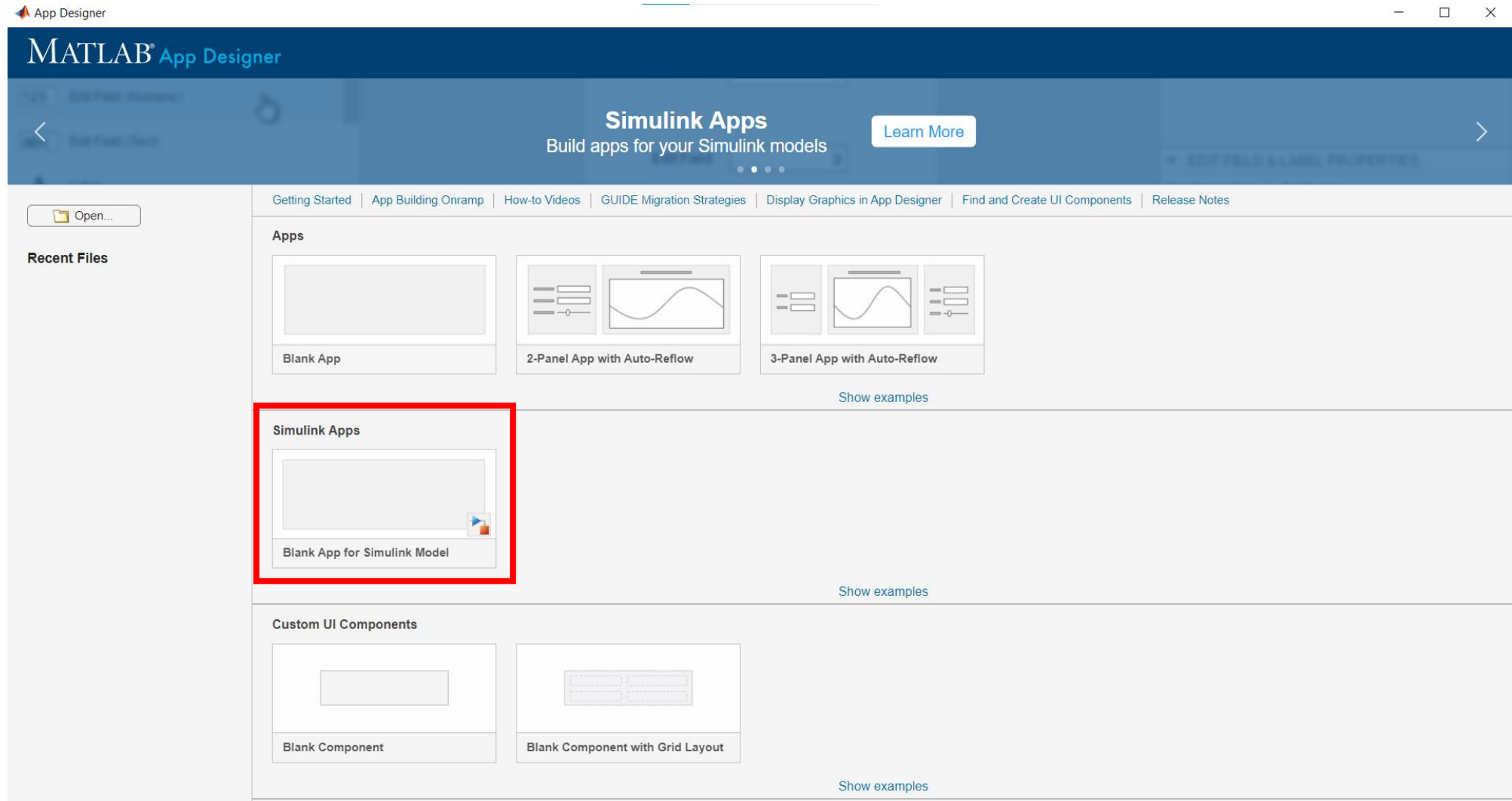
Jak otworzyć App Designer?



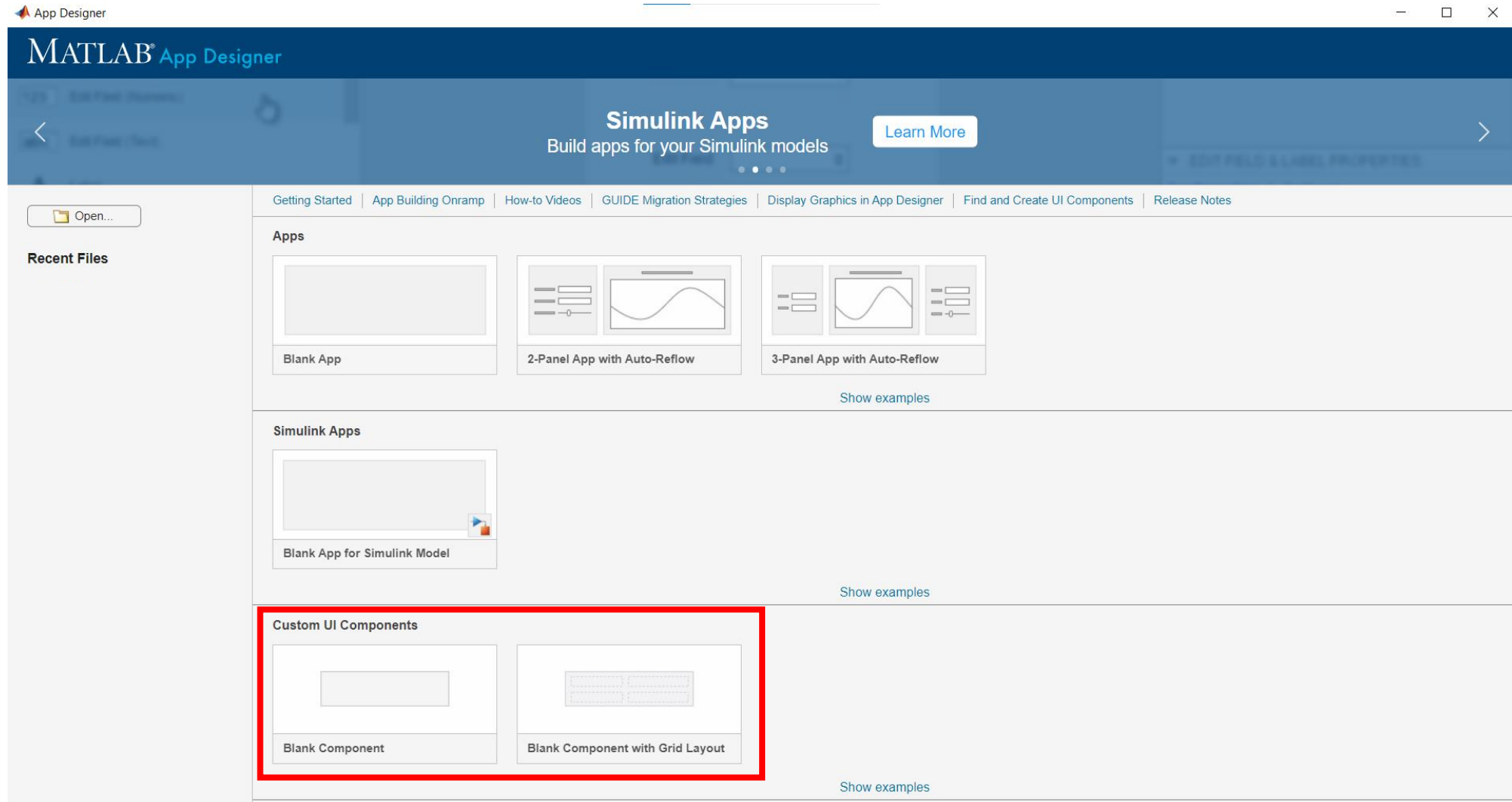
Tworzenie nowego projektu



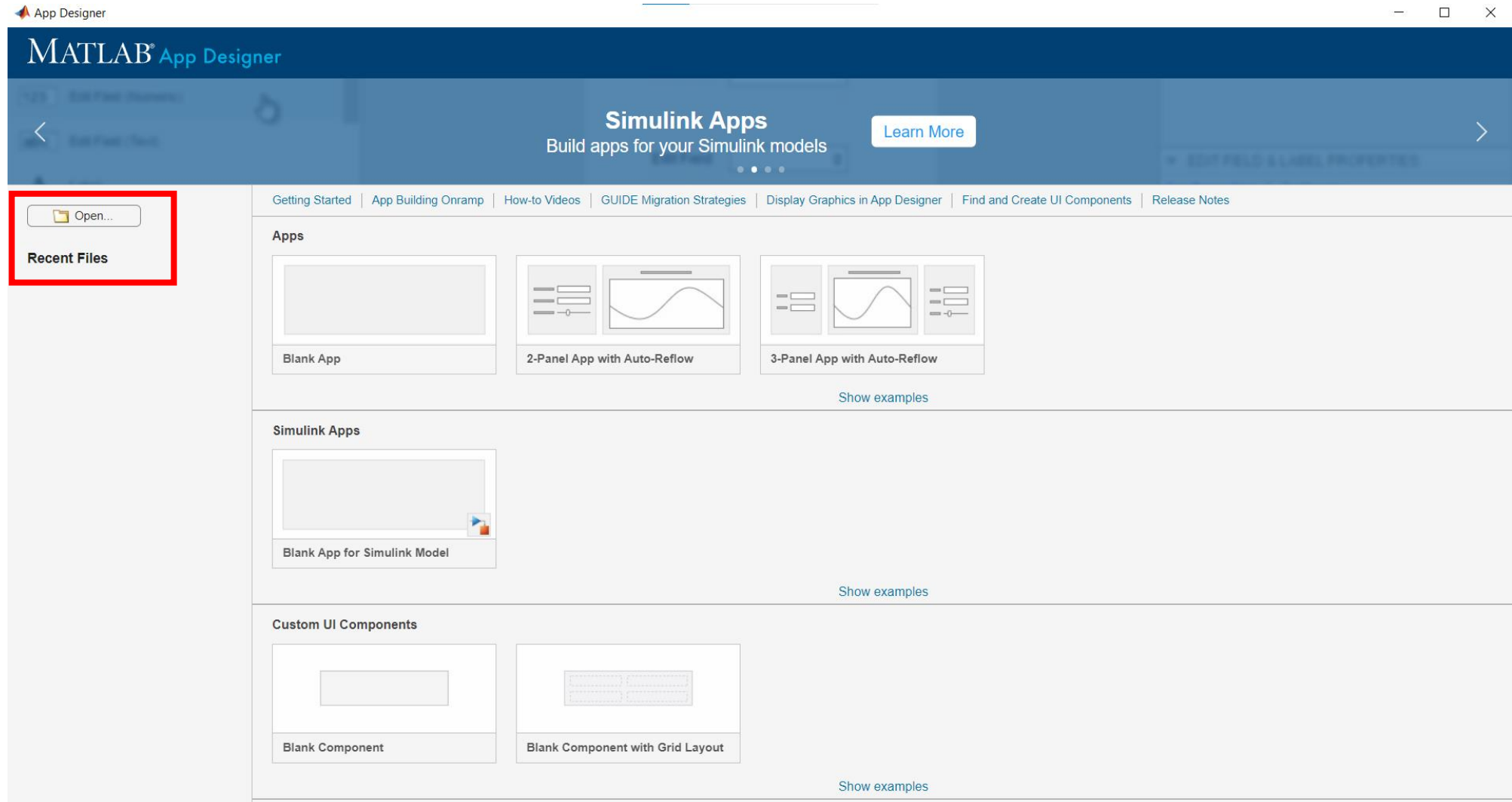
Tworzenie nowego projektu



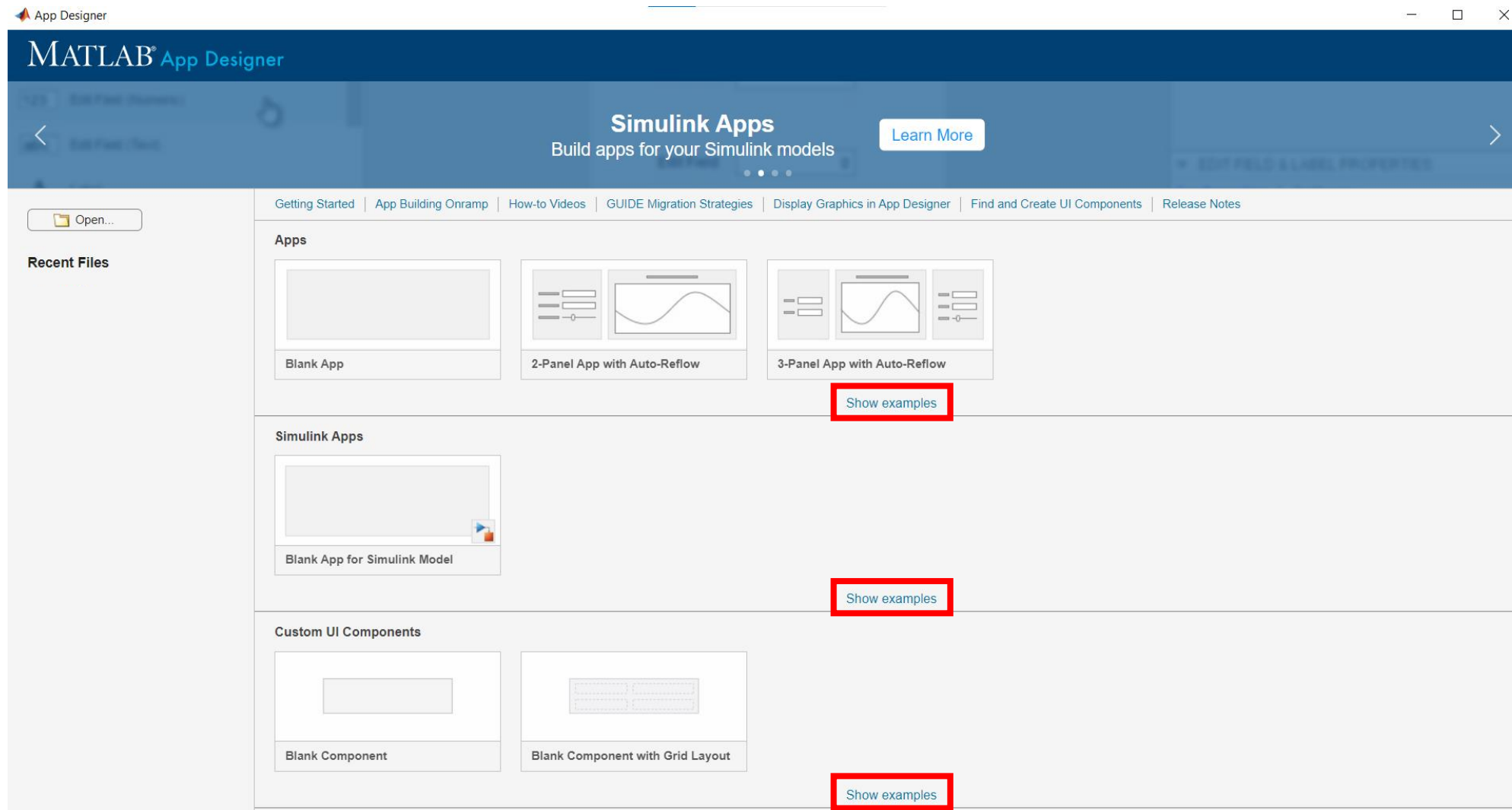
Tworzenie nowego projektu



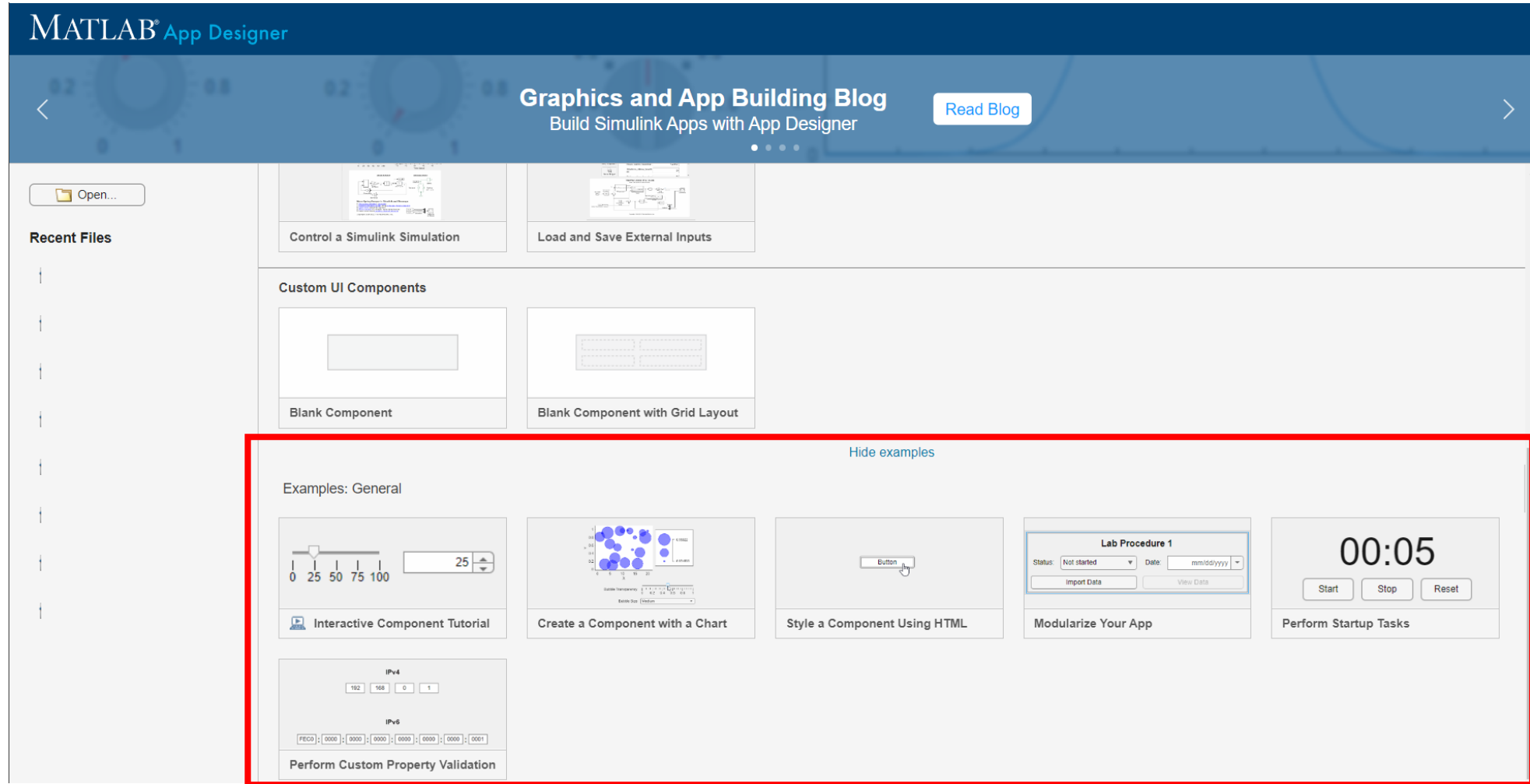
Tworzenie nowego projektu



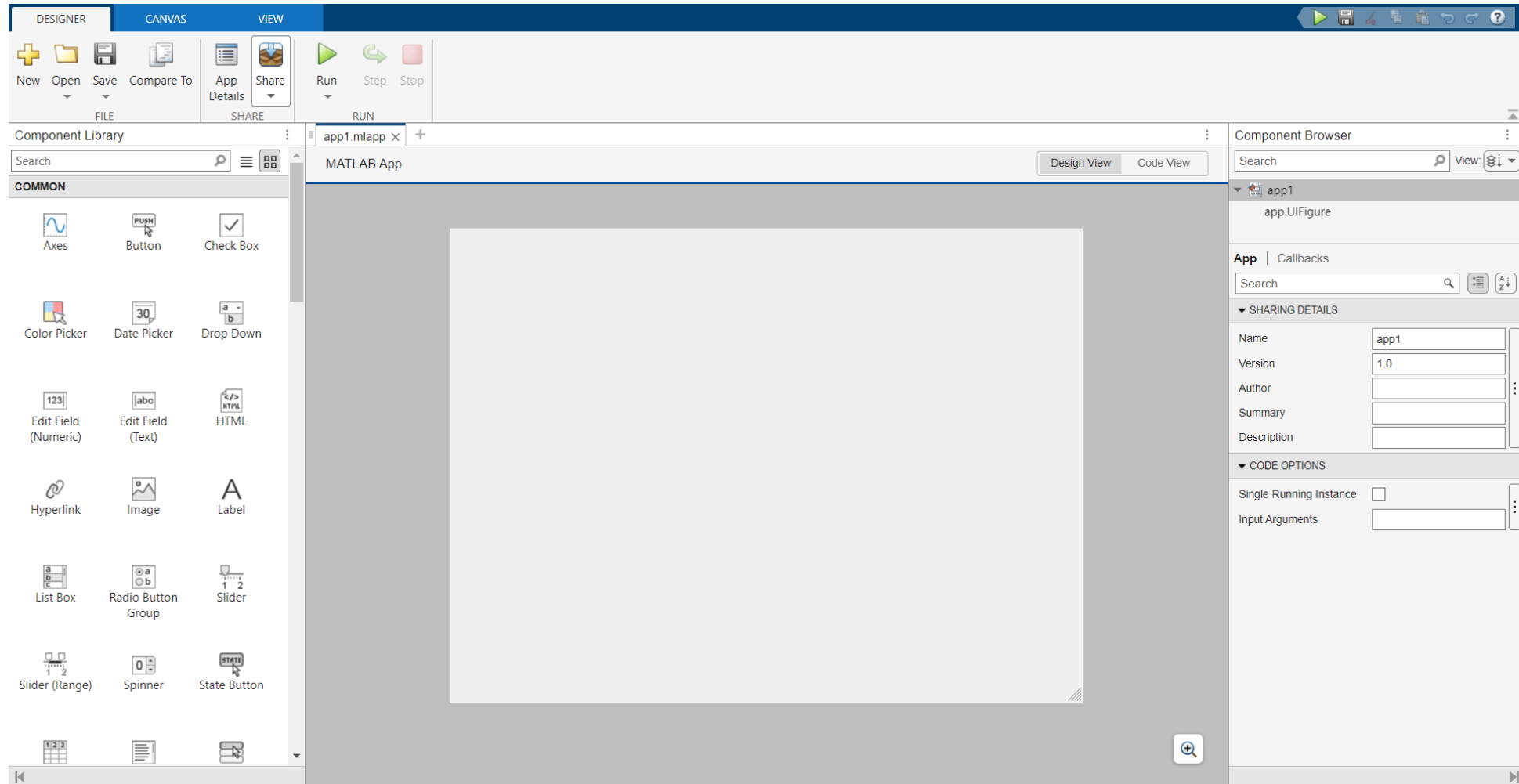
Tworzenie nowego projektu



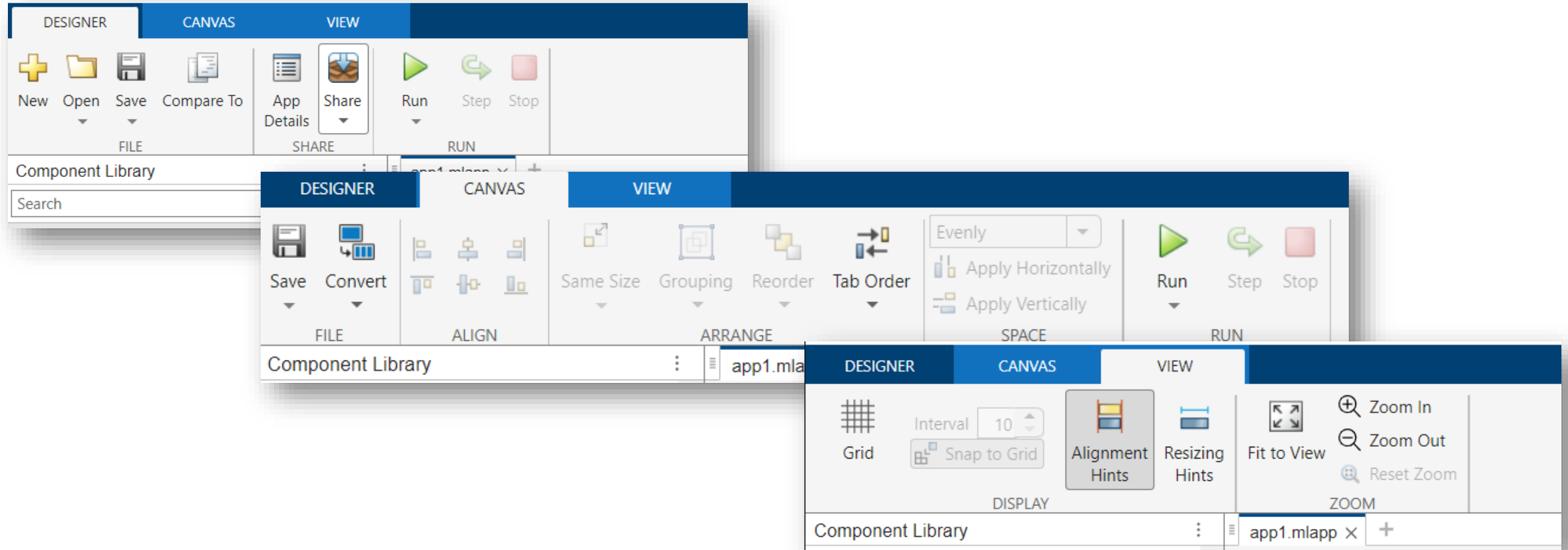
Tworzenie nowego projektu



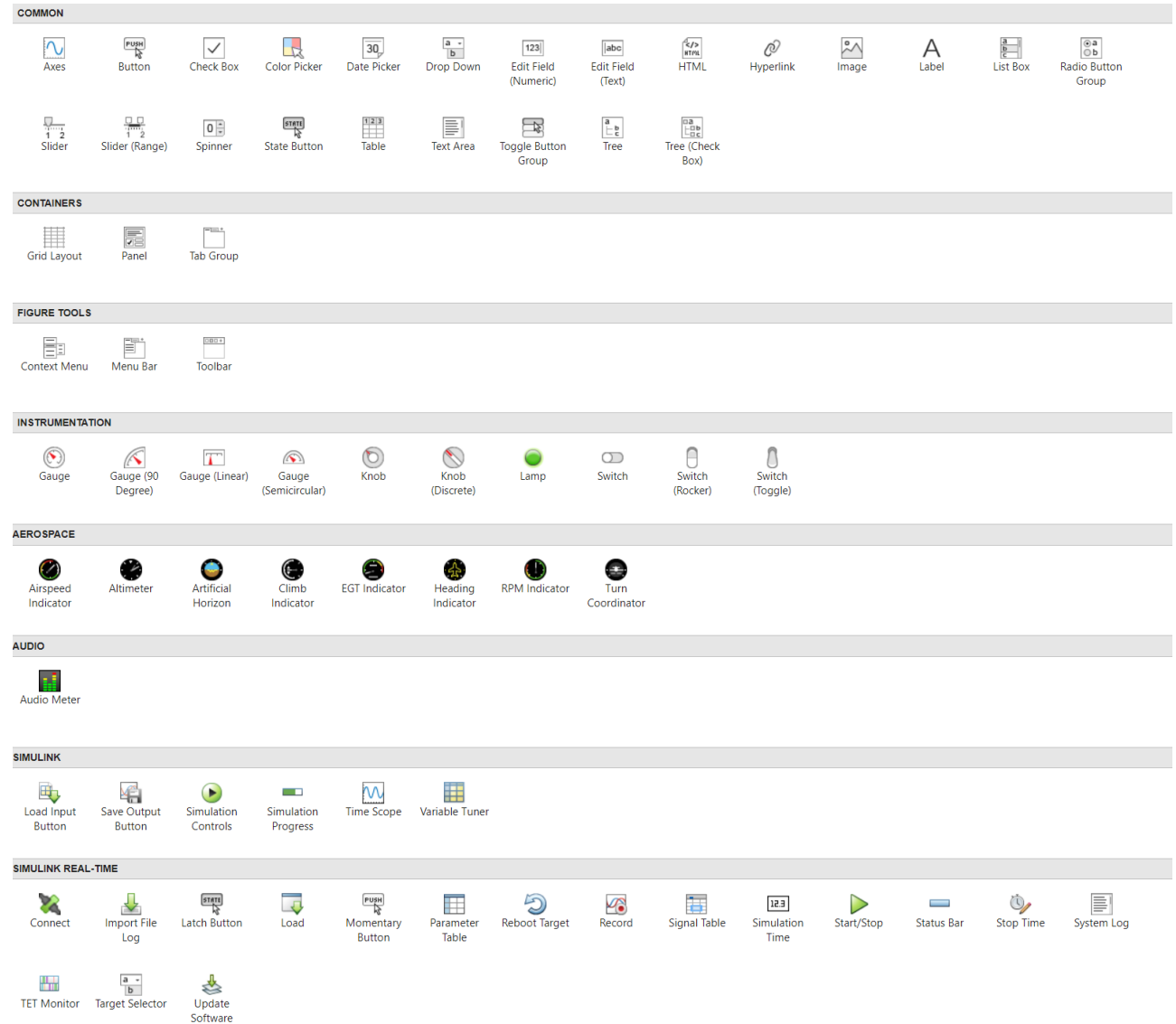
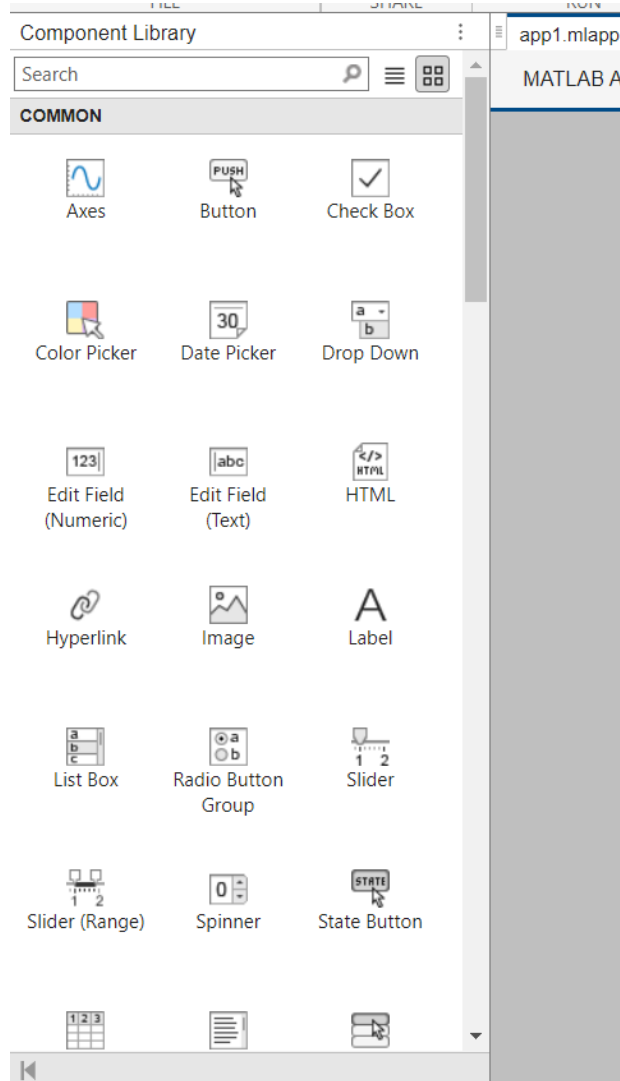
Poznaj Interface



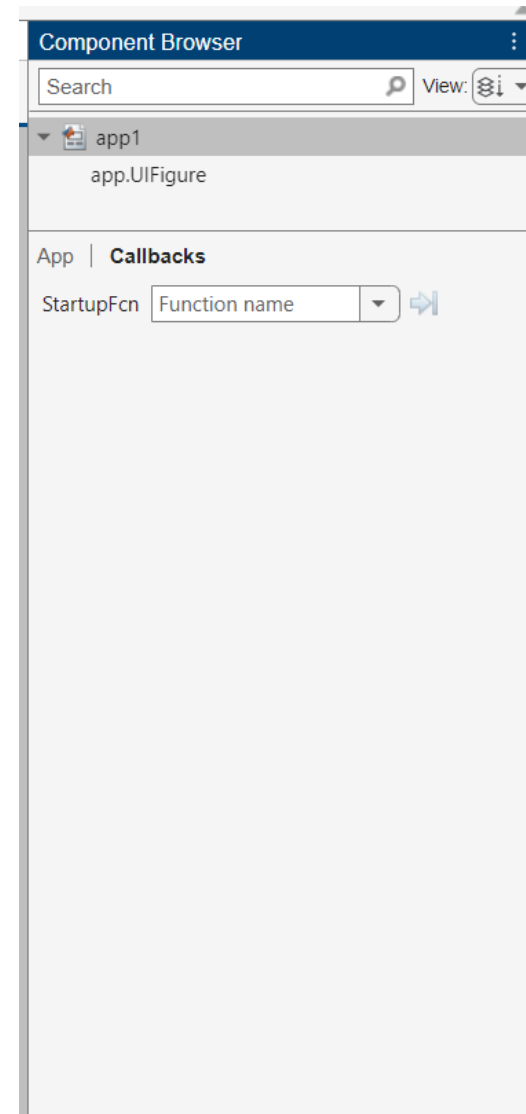
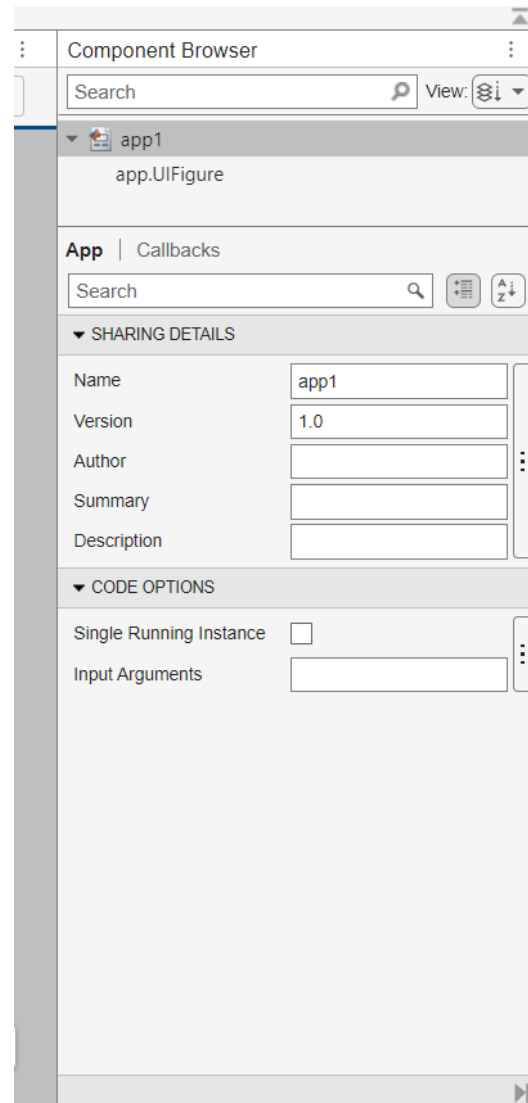
Poznaj Interface



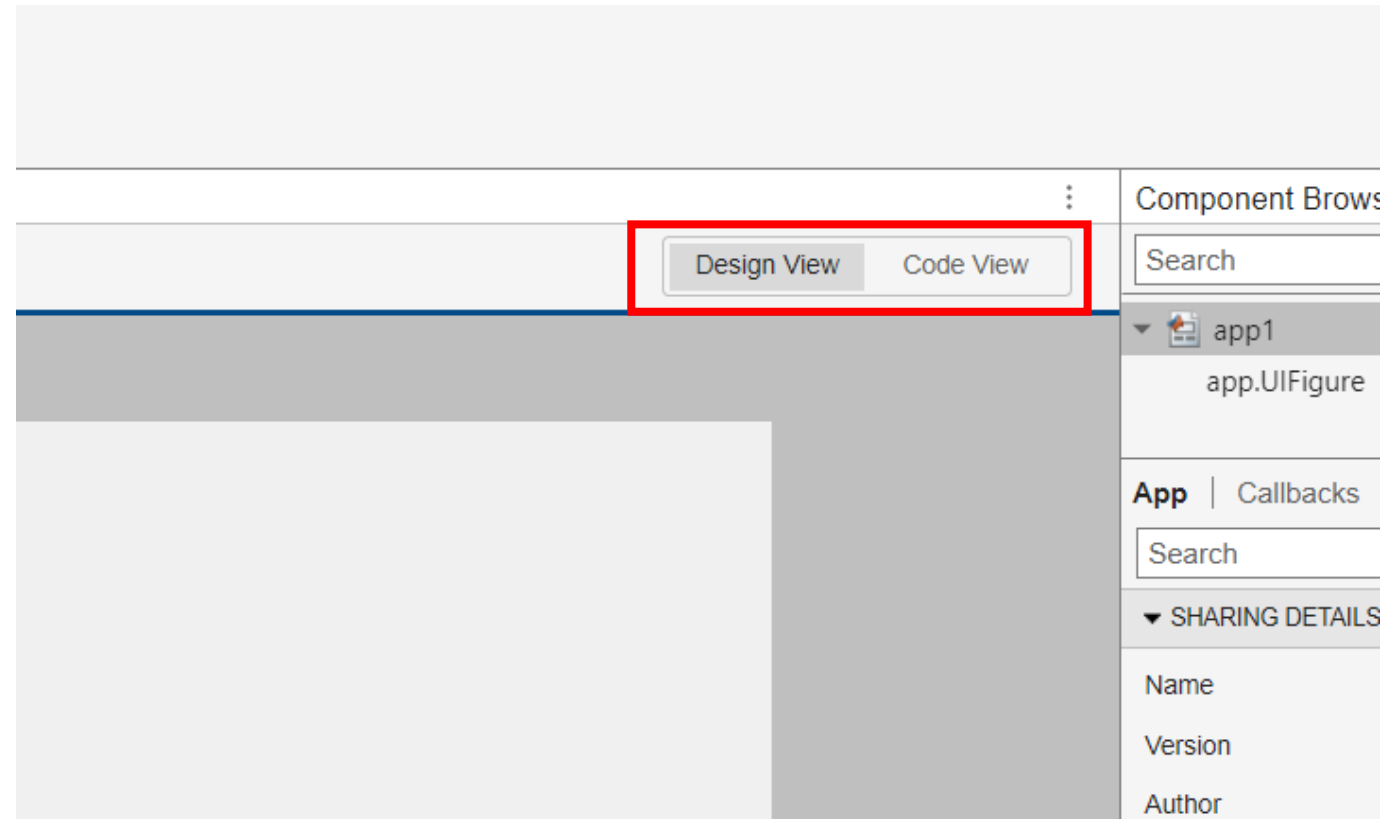
Poznaj Interface



Poznaj Interface



Poznaj Interface



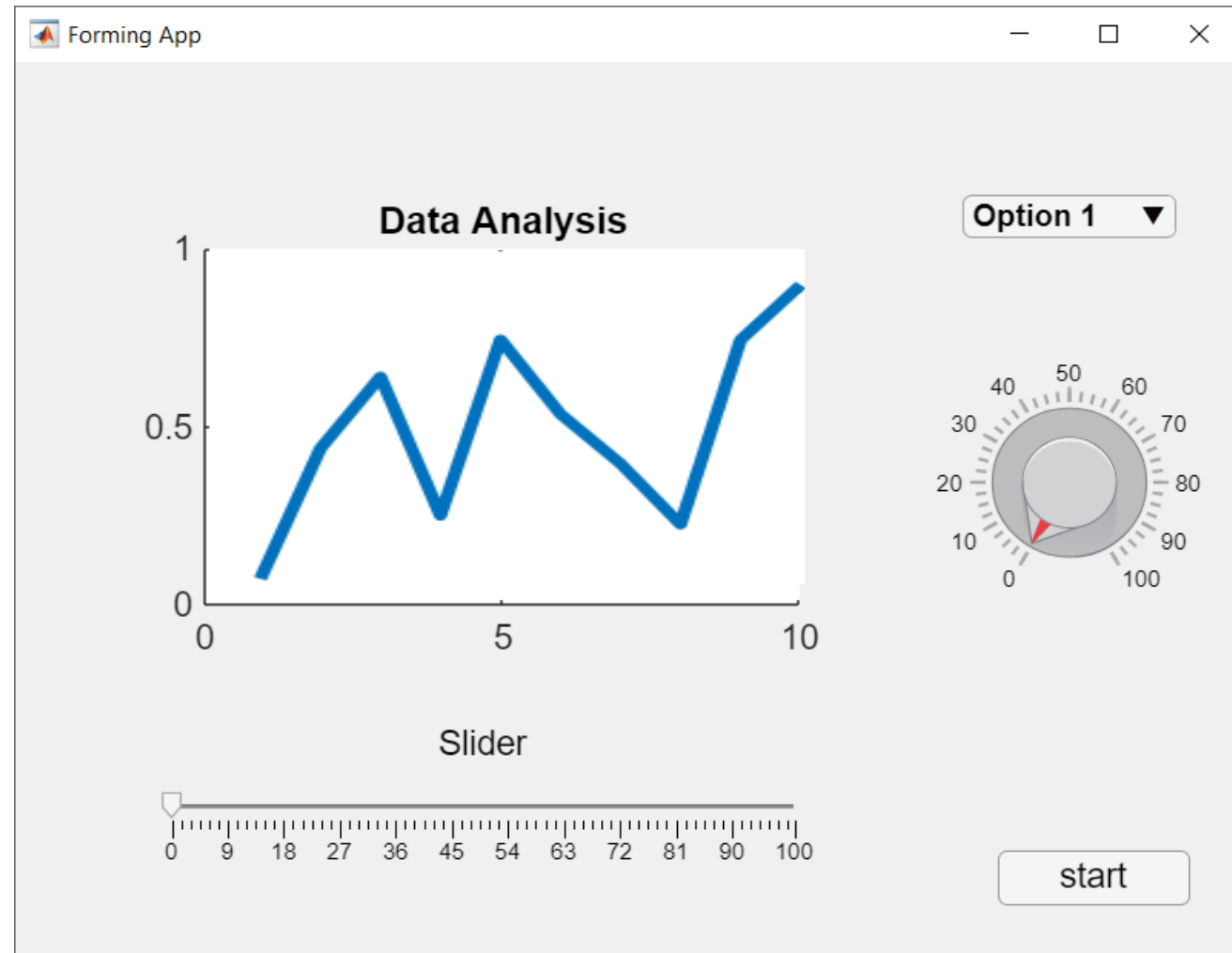
Poznaj Interface

The screenshot displays the MATLAB App Designer interface. The top menu bar includes 'DESIGNER', 'EDITOR', and 'VIEW'. Below it is a toolbar with icons for Save, Compare To, Print, Go To, Find, Bookmark, Callback, Function, Property, App Input Arguments, App Help Text, Comment, Indent, Run, Step, and Stop. The main workspace is divided into three panes:

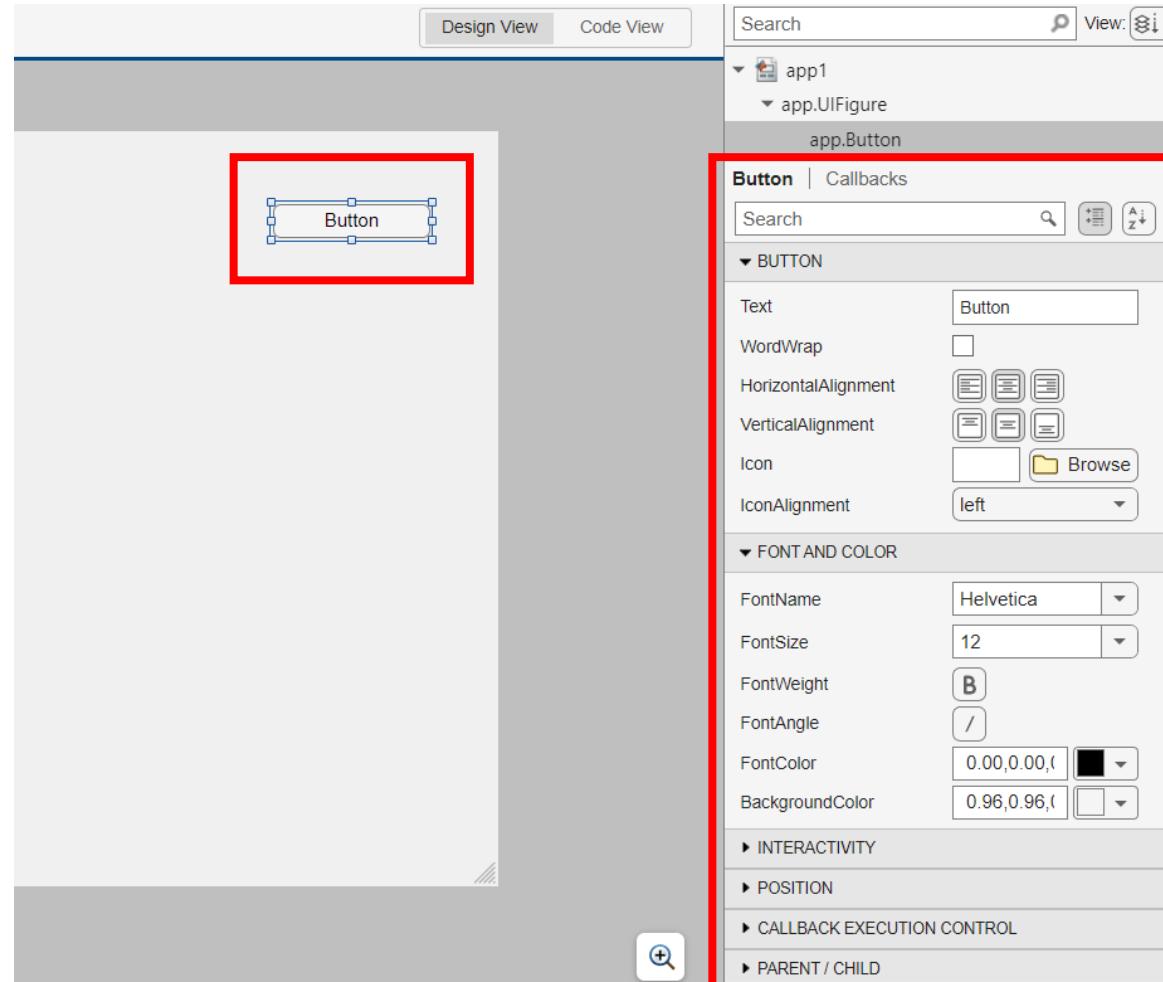
- Code Browser:** Shows the file 'app1.mlapp' and the 'MATLAB App' code editor. The code is as follows:

```
1 classdef app1 < matlab.apps.AppBase
2
3     % Properties that correspond to app components
4     properties (Access = public) ...
5
6
7
8     % Component initialization
9     methods (Access = private)
10
11         % Create UIFigure and components
12         function createComponents(app) ...
13
14         end
15
16
17
18     % App creation and deletion
19     methods (Access = public)
20
21
22
23
24         % Construct app
25         function app = app1 ...
26
27         end
28
29
30
31     % Code that executes before app deletion
32     function delete(app) ...
33
34     end
35
36 end
```
- Component Browser:** Shows a tree view with 'app1' expanded to 'app.UIFigure'. Below it, the 'App | Callbacks' section has a 'StartupFcn' dropdown menu set to 'Function name'.
- App Layout:** This pane is highlighted with a red rectangle and is currently empty, indicating that the visual design of the app has not yet been defined.

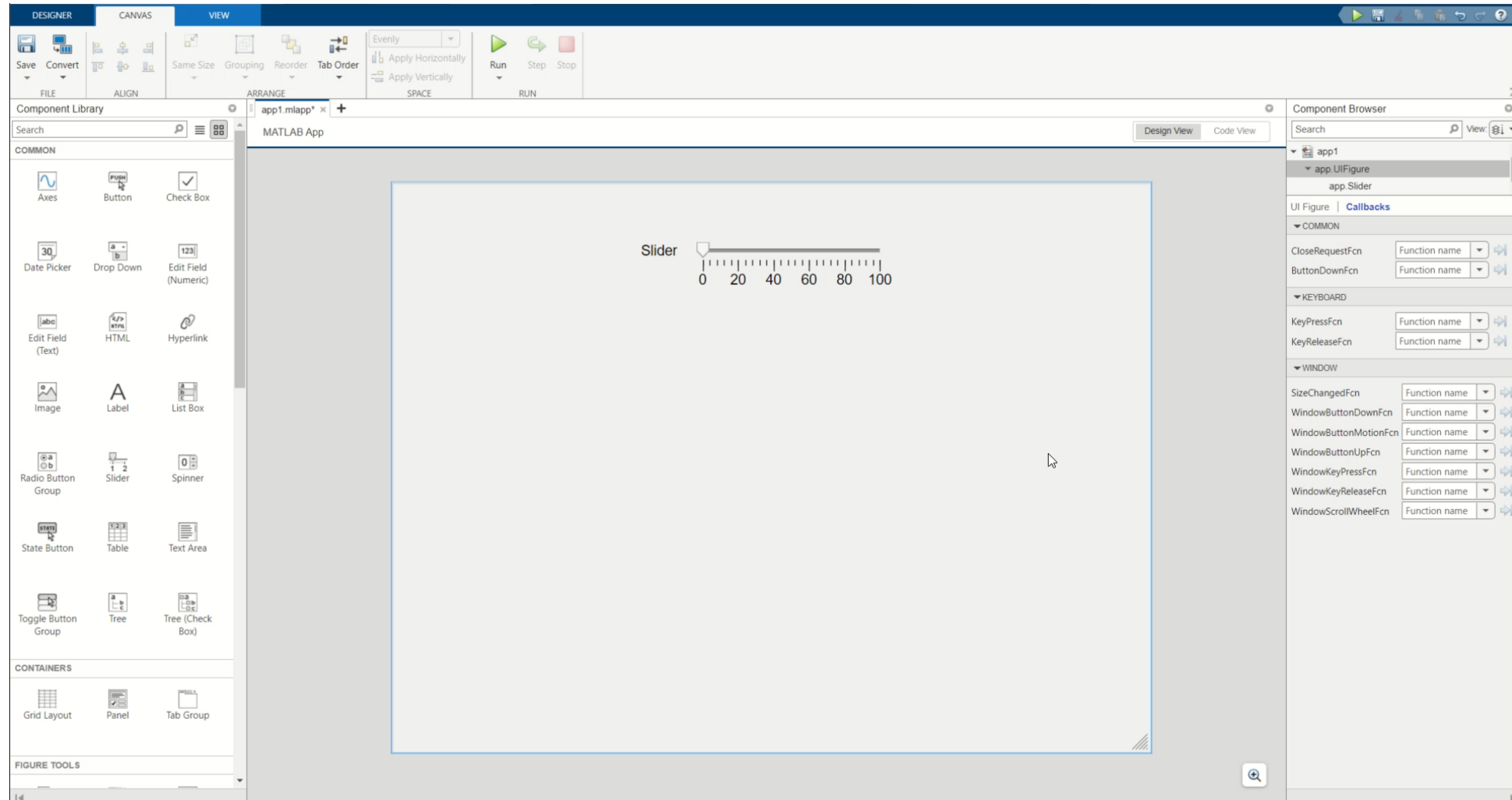
Tworzenie



Komponenty



Callbacks – co to i jak działają?

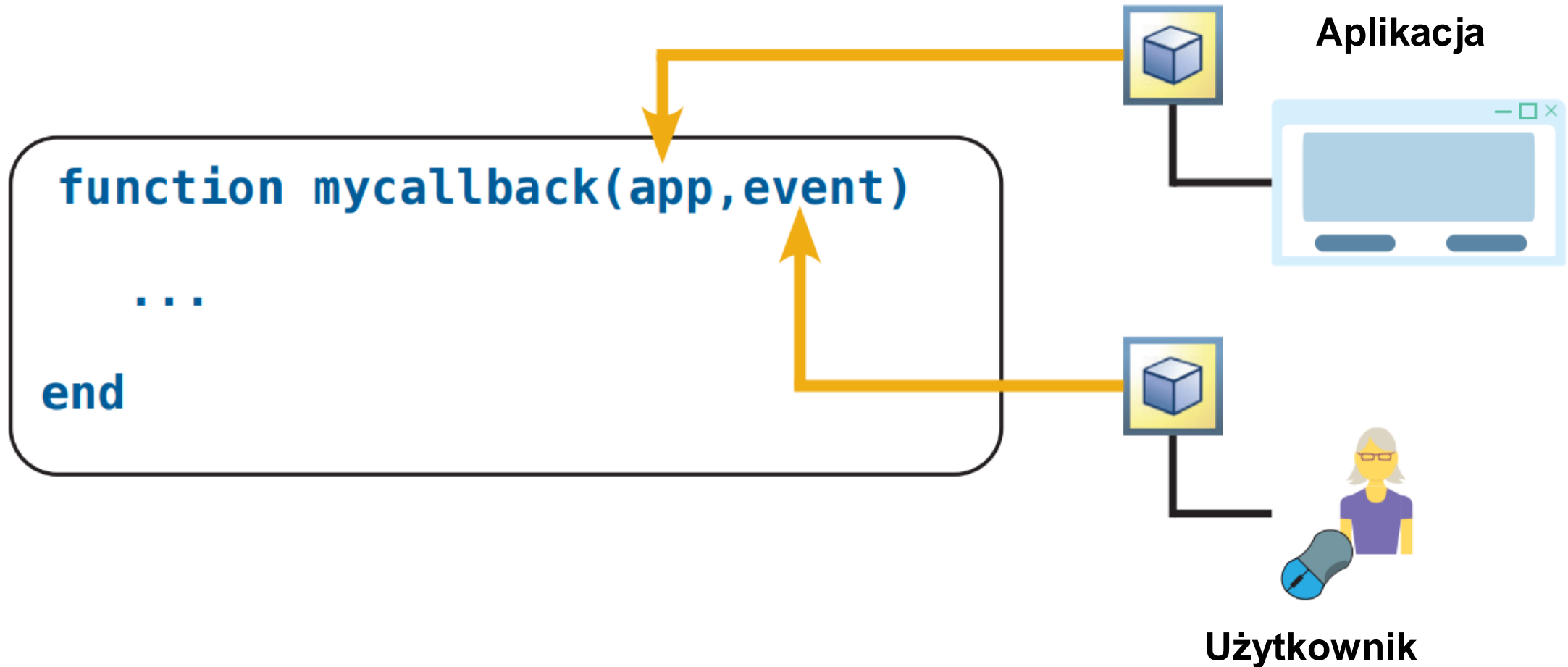


Callbacks – co to i jak działają?

```

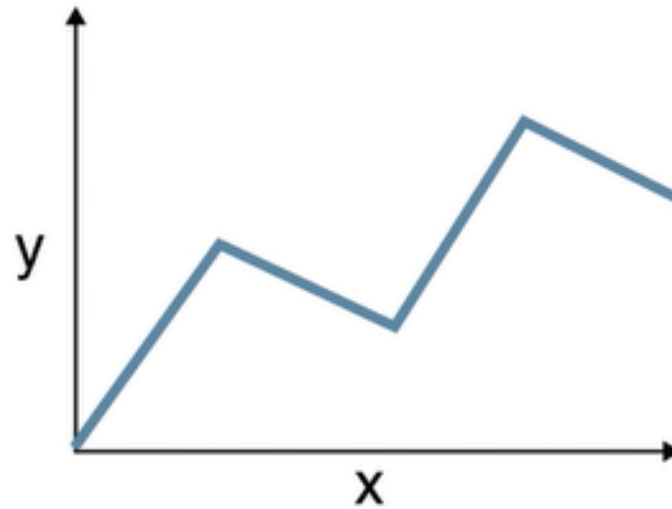
% Image clicked function: Image
function ImageClicked(app, event)
    |
end
end
  
```

Callbacks – co to i jak działają?



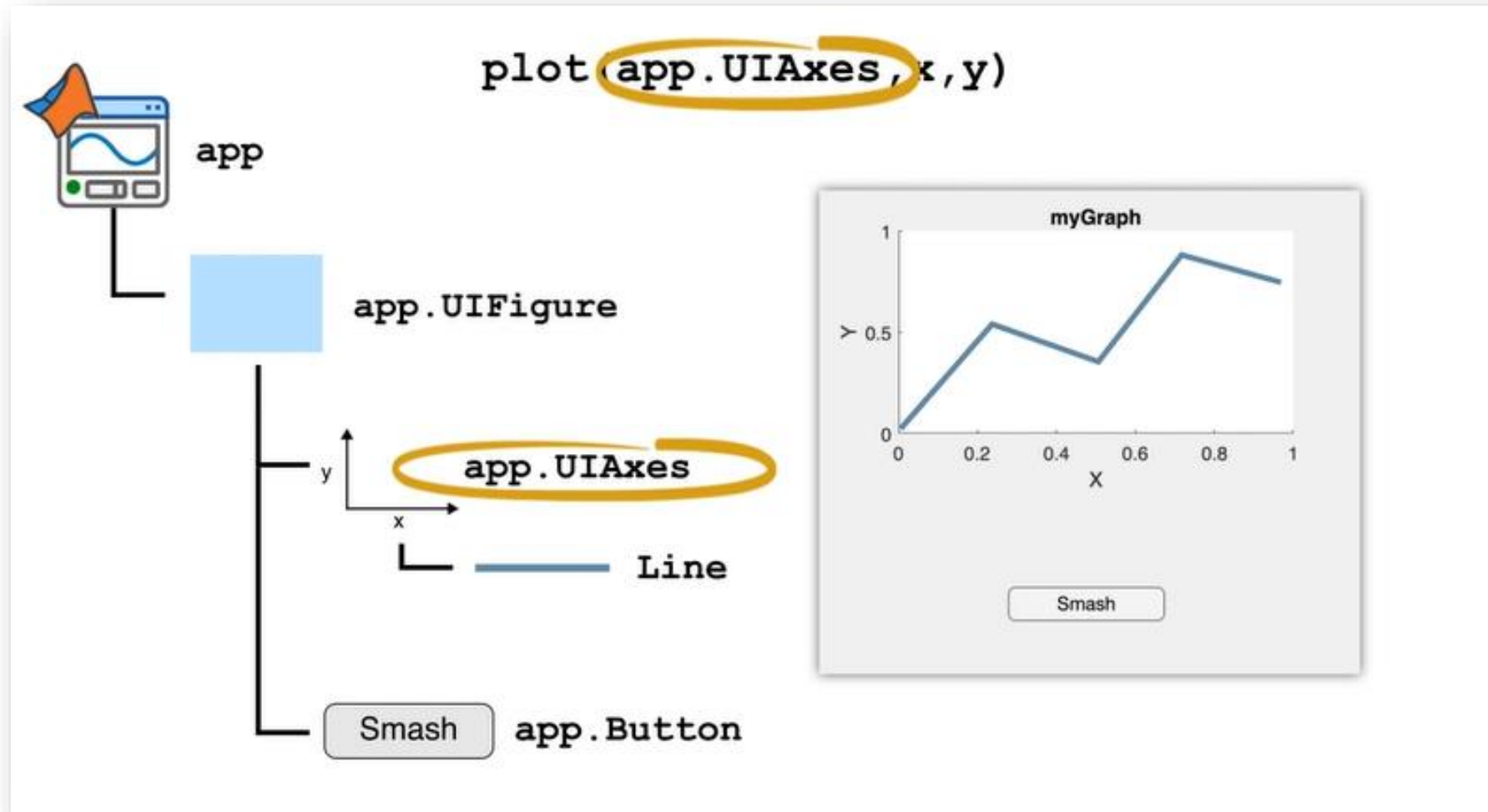
Hierarchia

```
plot(x,y)
```



```
plot(x,y) ⚠ Specify an Axes handle as first argument.
```

Hierarchia



Klasy

classdef...end— Definicja wszystkich komponentów klasy

properties...end— Deklaracja nazw właściwości, specyfikacja atrybutów właściwości, przypisanie wartości domyślnych

methods...end— Deklaracja sygnatur metod, atrybutów metod i kodu funkcji

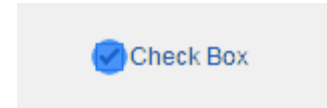
events...end— Deklaracja nazwy i atrybutów wydarzenia

enumeration...end— Deklaracja elementów wyliczeniowych i wartości wyliczeniowych dla klas wyliczeniowych

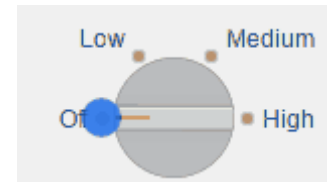
properties, methods, events i enumeration są słowami kluczowymi tylko w obrębie ***classdef*** bloku.

Automatyczne testowanie aplikacji

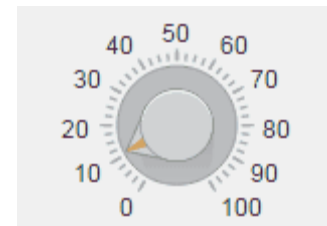
```
testCase.press(myApp.checkbox)
```



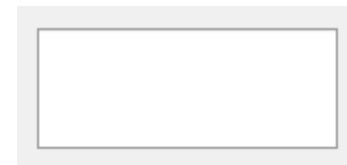
```
testCase.choose(myApp.discreteKnob, "Medium")
```



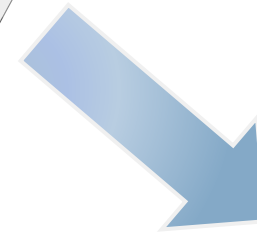
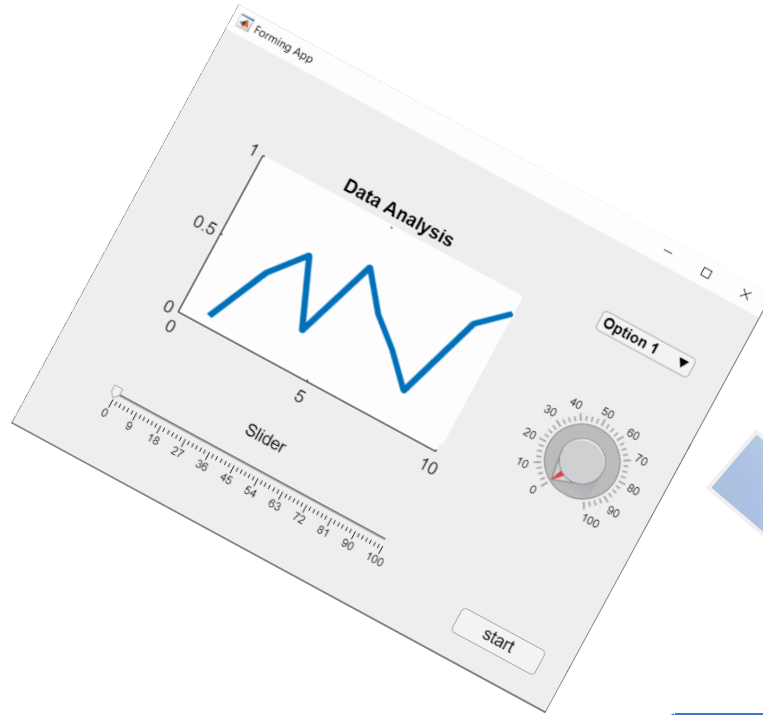
```
testCase.drag(myApp.continuousKnob, 10, 90)
```



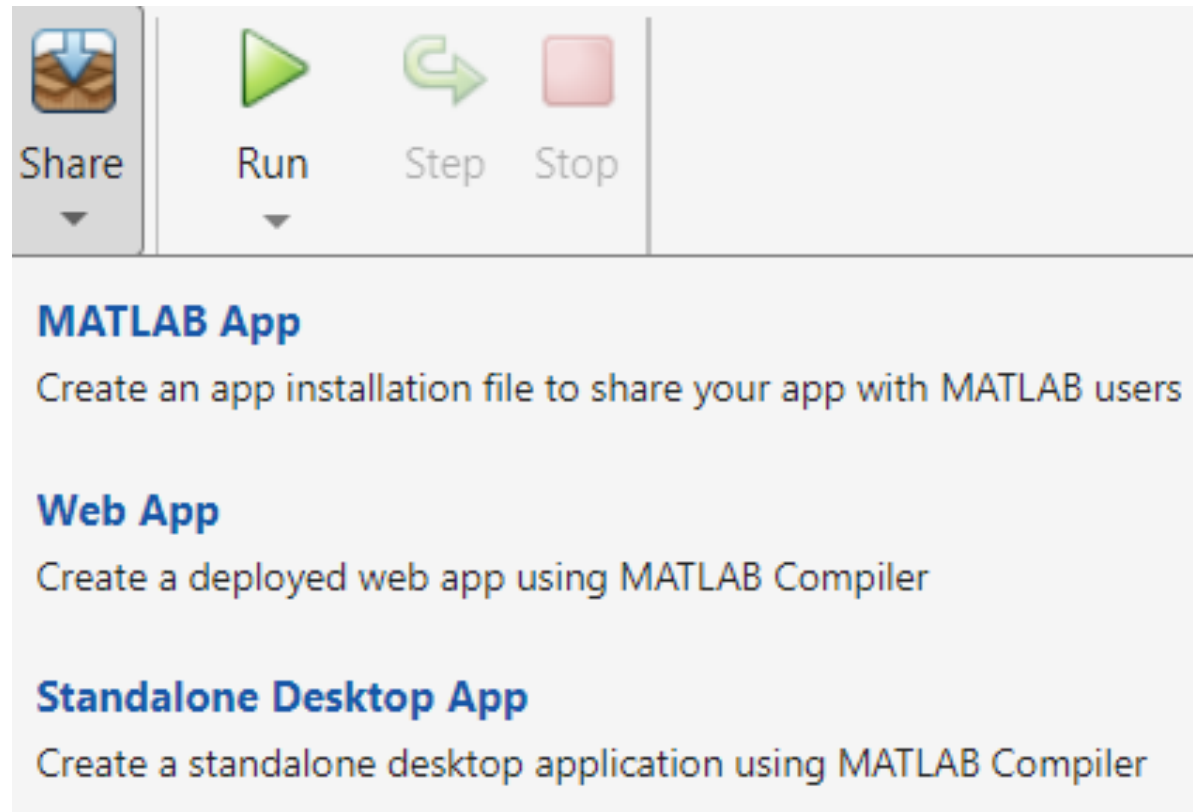
```
testCase.type(myApp.editfield, myTextVar)
```



Pakowanie

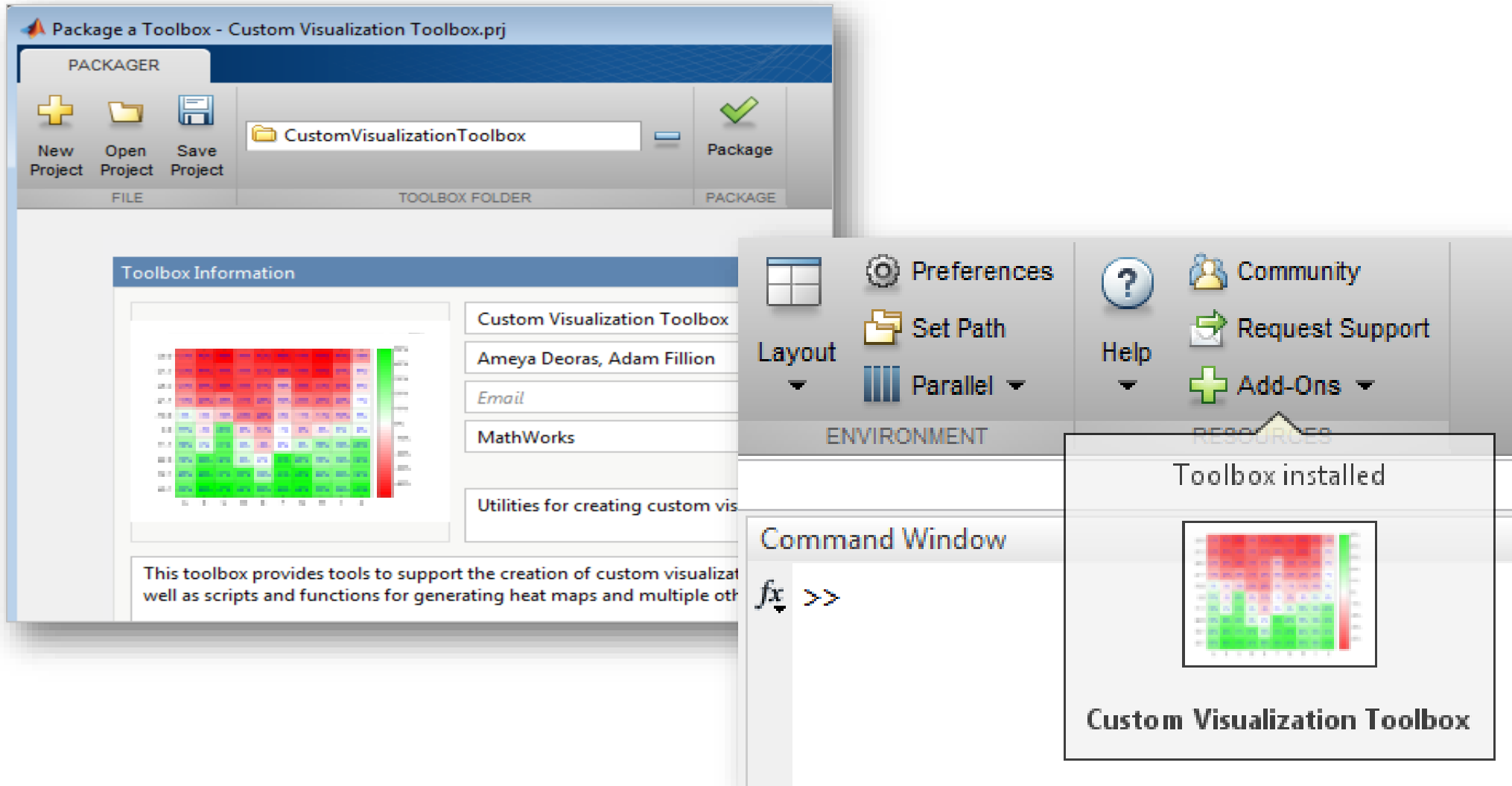


Pakowanie



[Web App Limitations and Unsupported Functionality](#)

Stwórz własny Toolbox



The screenshot illustrates the process of creating and installing a custom toolbox in MATLAB. It shows the 'Package a Toolbox' dialog box, the 'Toolbox Information' window, and the 'Add-Ons' menu with a 'Toolbox installed' notification.

Package a Toolbox - Custom Visualization Toolbox.prj

PACKAGER

FILE: New Project, Open Project, Save Project

TOOLBOX FOLDER: CustomVisualizationToolbox

PACKAGE: Package

Toolbox Information

Custom Visualization Toolbox

Ameya Deoras, Adam Fillion

Email

MathWorks

Utilities for creating custom vis

This toolbox provides tools to support the creation of custom visualizat well as scripts and functions for generating heat maps and multiple oth

ENVIRONMENT

Layout, Preferences, Set Path, Parallel, Help, Community, Request Support, Add-Ons

RESOURCES

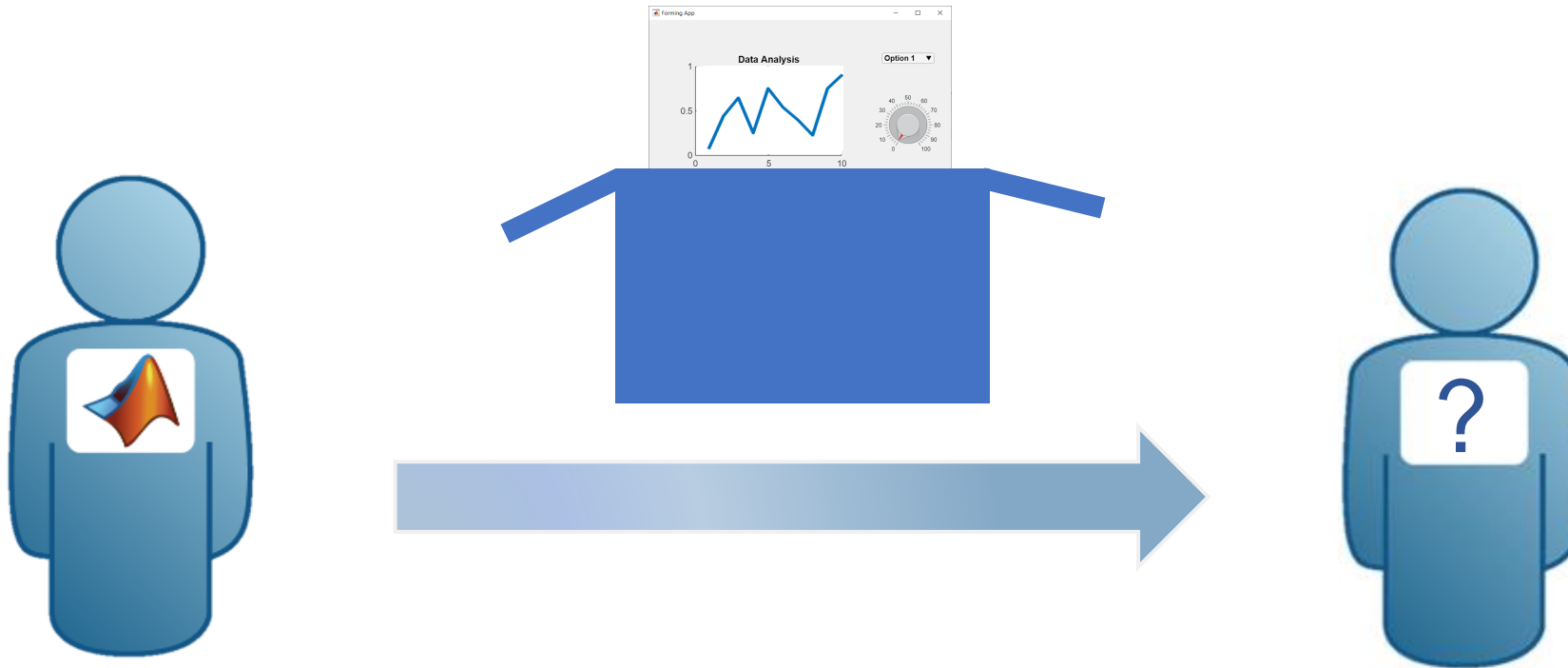
Toolbox installed

Command Window

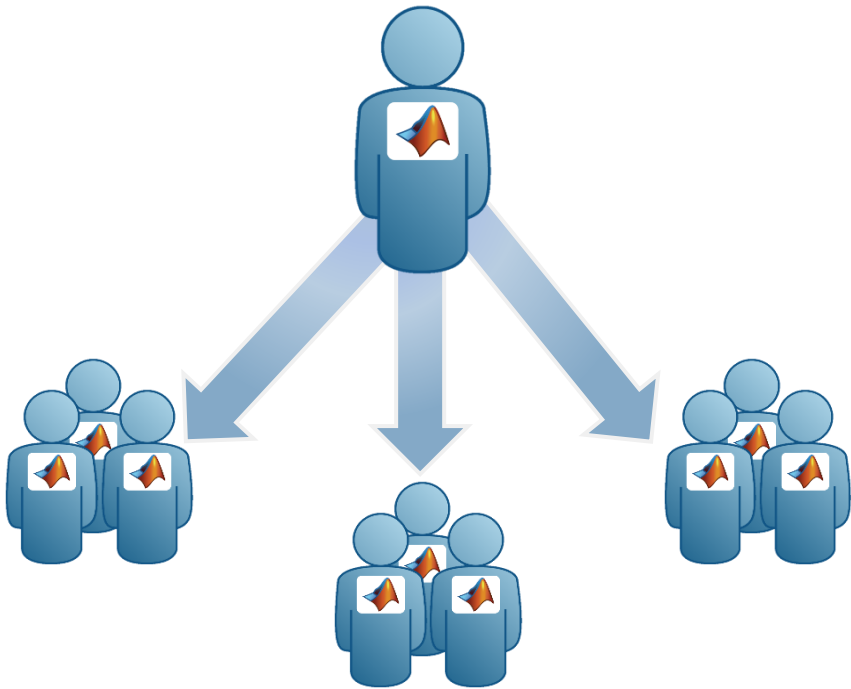
```
fx >>
```

Custom Visualization Toolbox

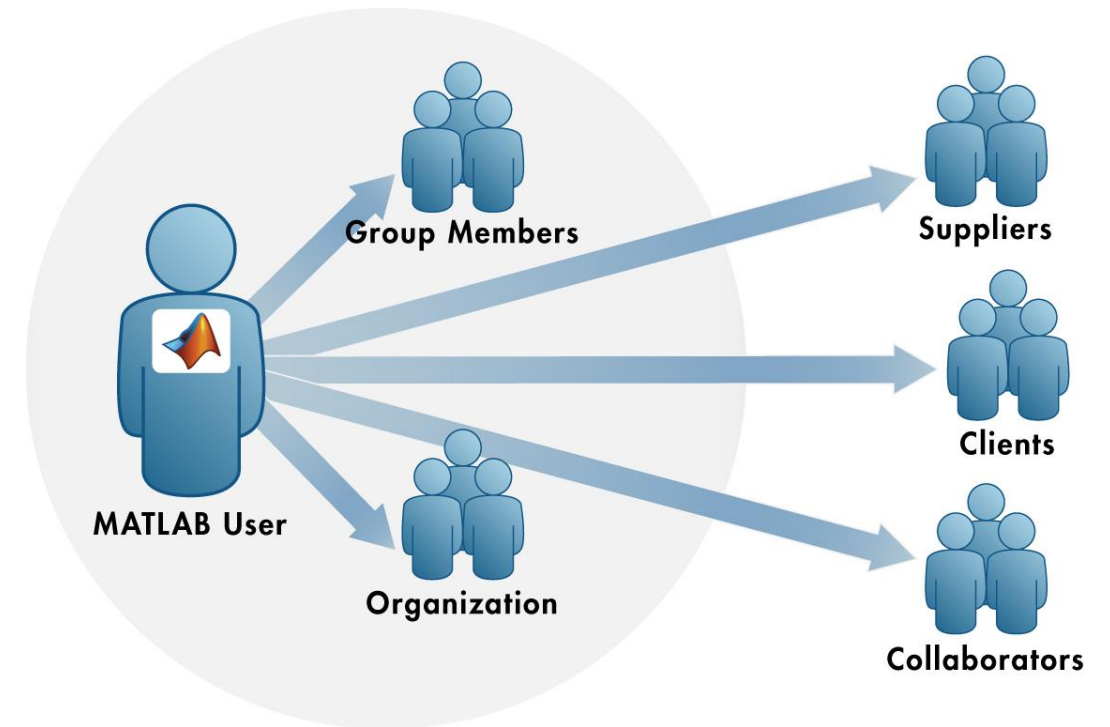
Udostępnianie



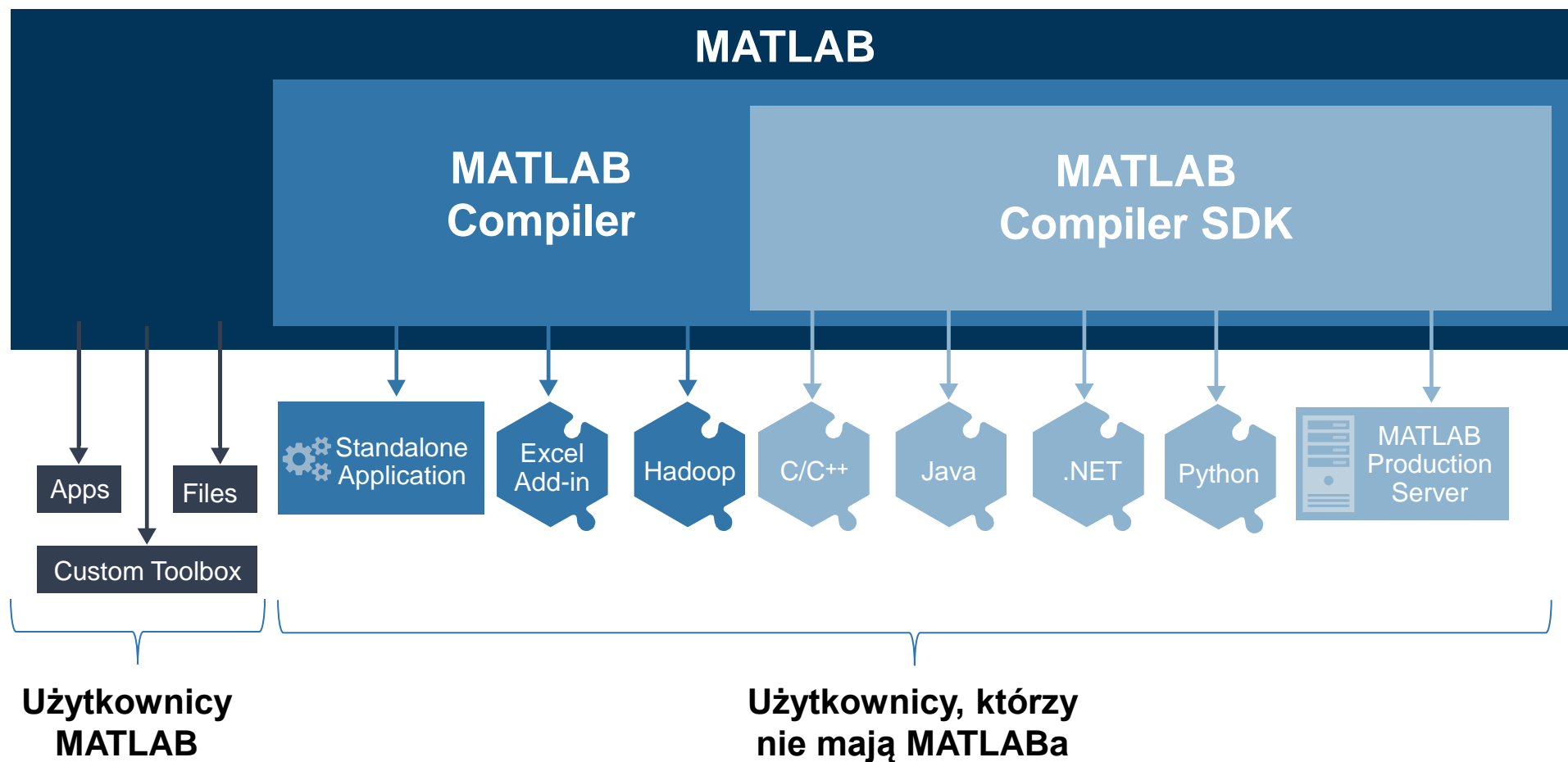
Udostępniaj innym użytkownikom MATLABa



Udostępniaj użytkownikom, którzy nie posiadają MATLABa

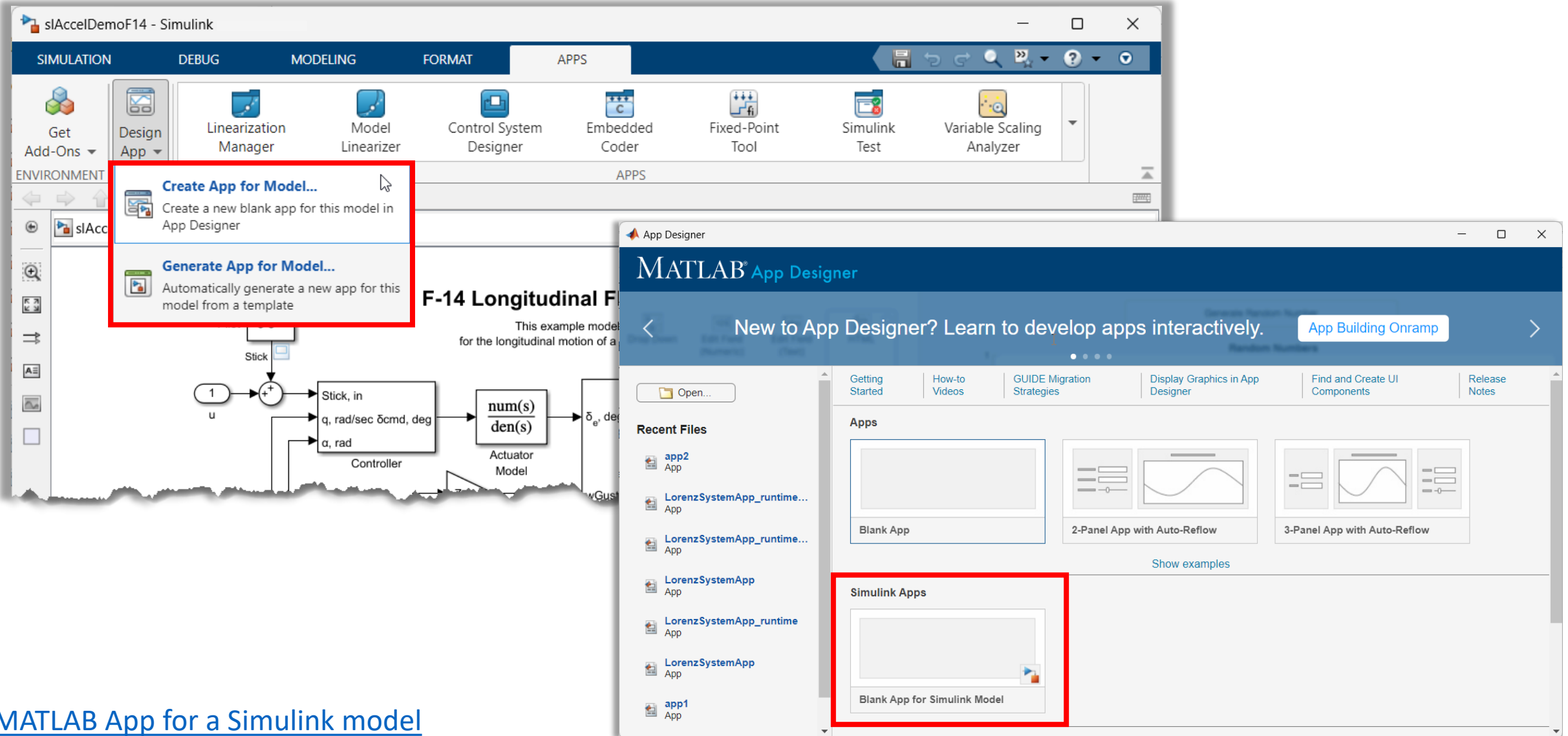


Udostępnij osobom bez MATLABa



Nowości

Aplikacje Simulink

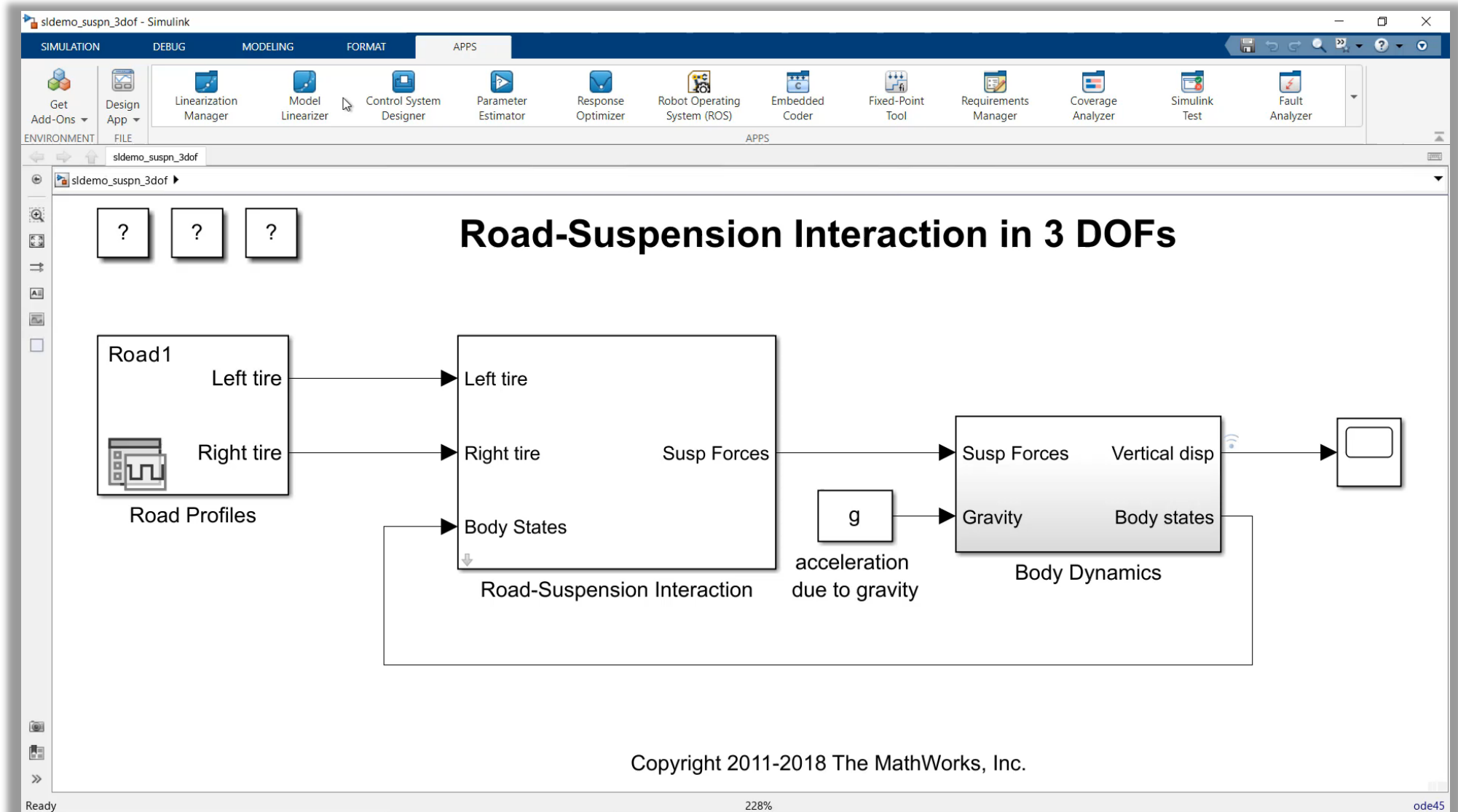


The image shows two overlapping windows from the MATLAB environment. The background window is Simulink, titled 'slAccelDemoF14 - Simulink'. The 'APPS' tab is active in the top ribbon, and the 'Design App' button is highlighted. A red box highlights the 'Design App' dropdown menu, which contains two options: 'Create App for Model...' (with a sub-description: 'Create a new blank app for this model in App Designer') and 'Generate App for Model...' (with a sub-description: 'Automatically generate a new app for this model from a template'). Below this menu, a Simulink block diagram for an 'F-14 Longitudinal F...' model is visible, showing a 'Stick' input, a 'Controller' block, and an 'Actuator Model' block.

The foreground window is 'App Designer', titled 'App Designer'. It displays the 'MATLAB App Designer' interface. A banner at the top says 'New to App Designer? Learn to develop apps interactively.' with a 'App Building Onramp' button. Below the banner, there are navigation links: 'Getting Started', 'How-to Videos', 'GUIDE Migration Strategies', 'Display Graphics in App Designer', 'Find and Create UI Components', and 'Release Notes'. The 'Apps' section shows several app templates: 'Blank App', '2-Panel App with Auto-Reflow', and '3-Panel App with Auto-Reflow'. A red box highlights the 'Simulink Apps' section, which contains a 'Blank App for Simulink Model' template.

MATLAB App for a Simulink model

Aplikacje Simulink



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Przykład w MATLABie



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matlab.pl



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naukowo-techniczne



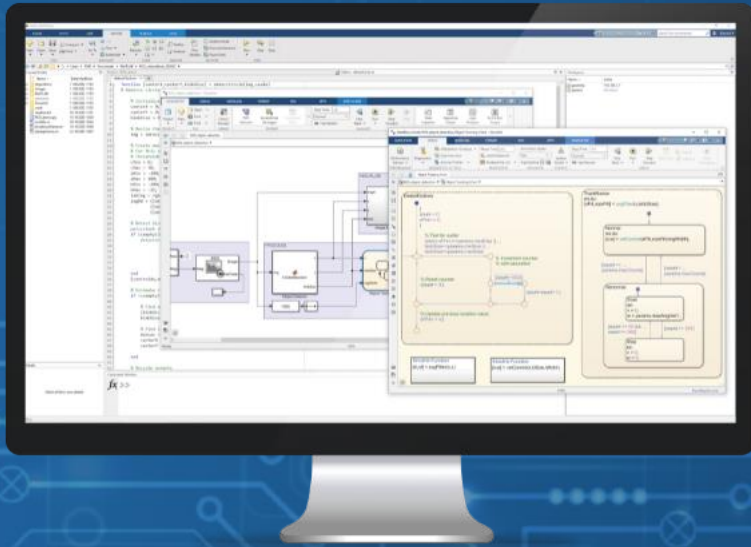
ONT MATLAB



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APPLICATIONS

- ▶ Robotics and Automation
- ▶ Computational Finance
- ▶ Autonomous Vehicles
- ▶ Electronics
- ▶ Artificial Intelligence
- ▶ Biomedical Engineering
- ▶ Systems Engineering and certification
- ▶ Power Electronics and Systems
- ▶ Communications and Radar Systems

Let's stay in touch

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