



Oprogramowanie
Naukowo-Techniczne
sp. z o.o.

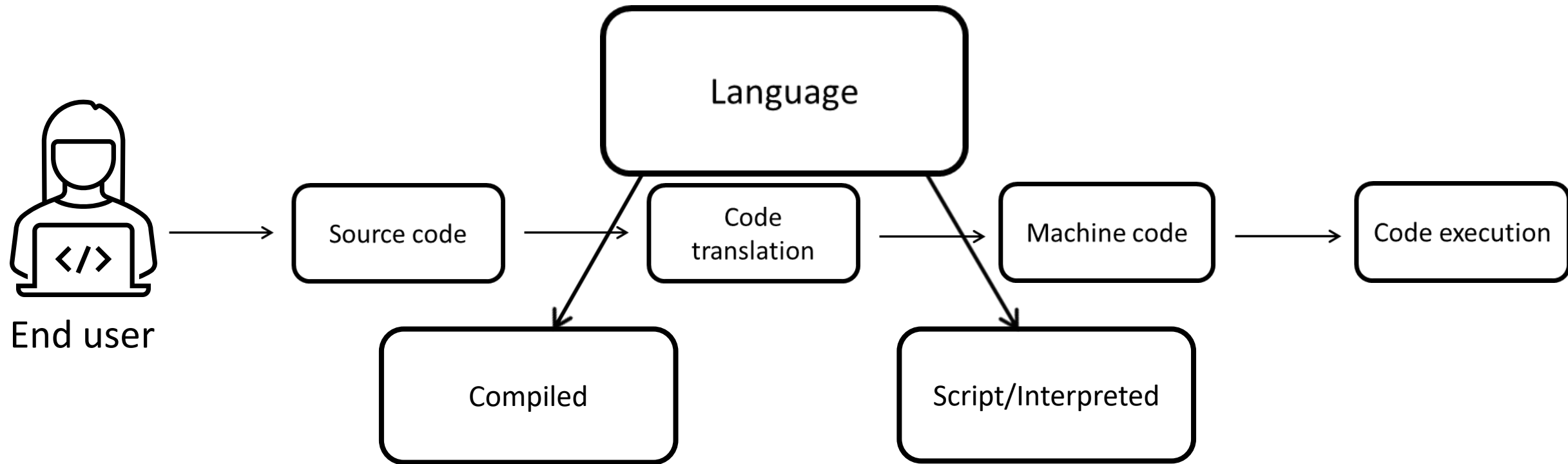
"How to run MATLAB without MATLAB?"

Running scripts without MATLAB

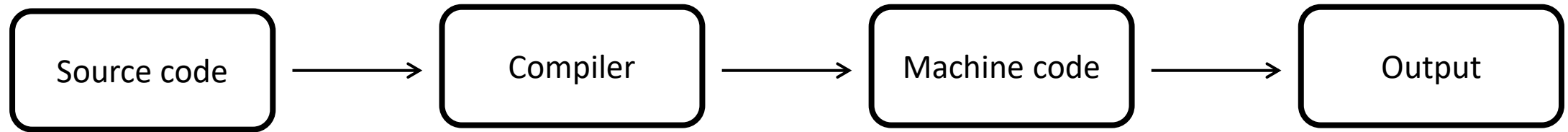
Filip Babiec, ONT



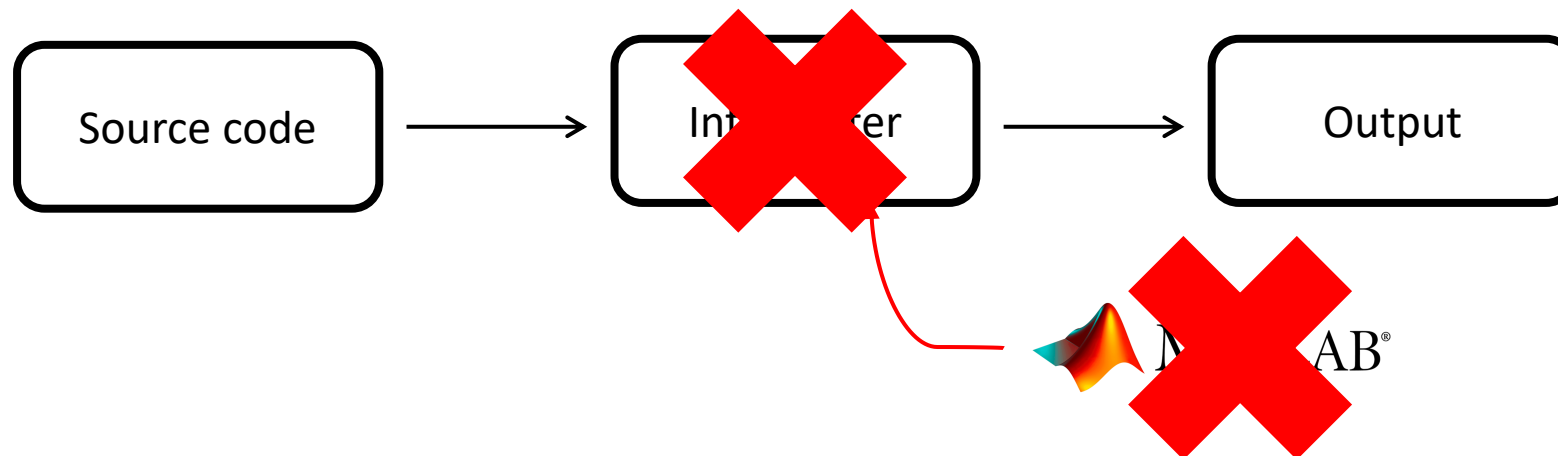
How to run code?



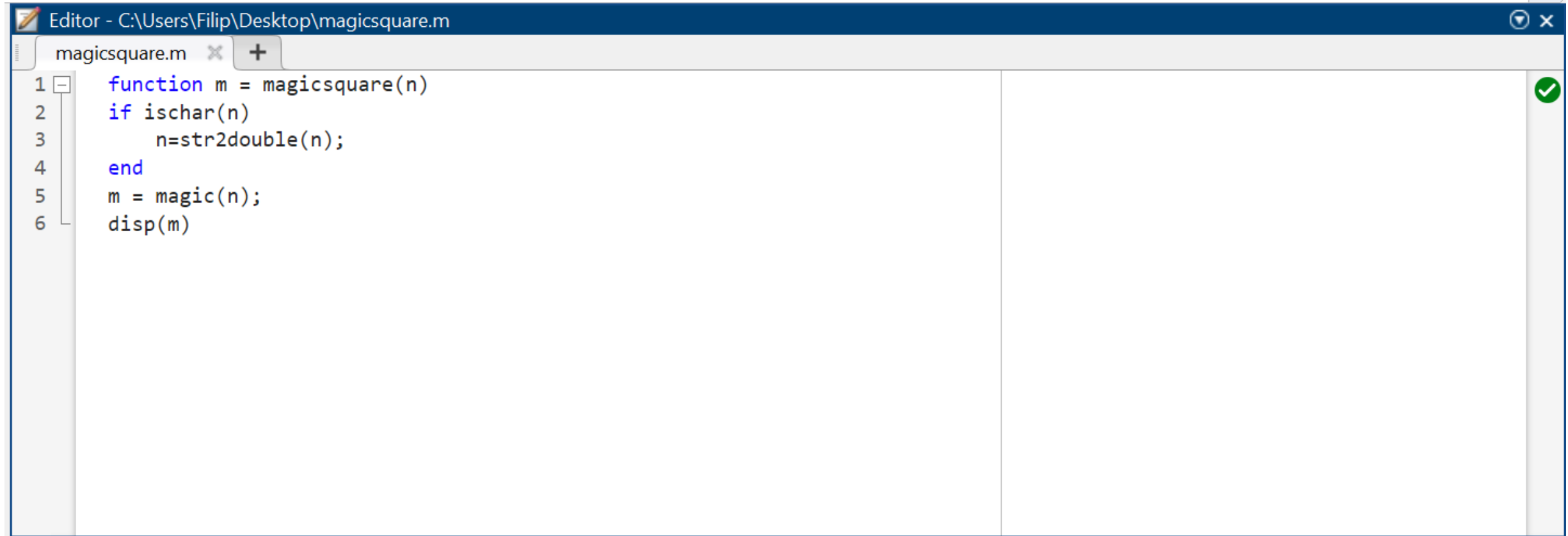
Compiled language



Script language



MATLAB script

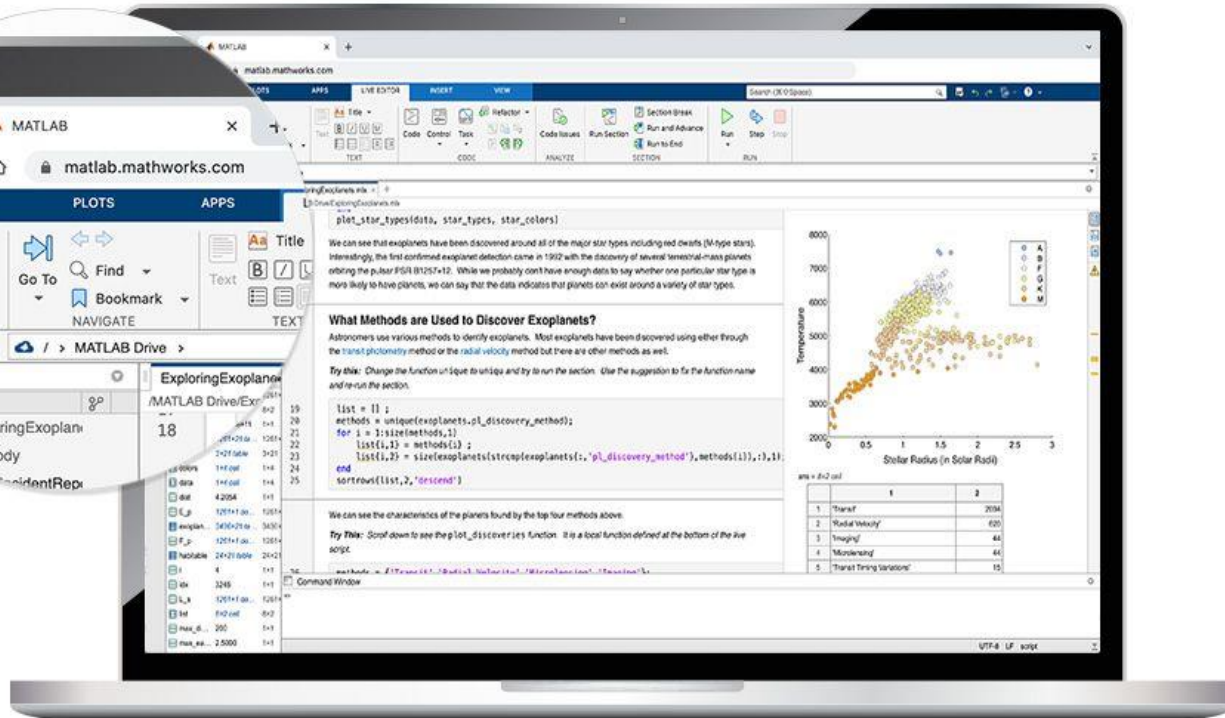


The image shows a MATLAB Editor window titled "Editor - C:\Users\Filip\Desktop\magicsquare.m". The window contains a single tab for "magicsquare.m". The code in the editor is as follows:

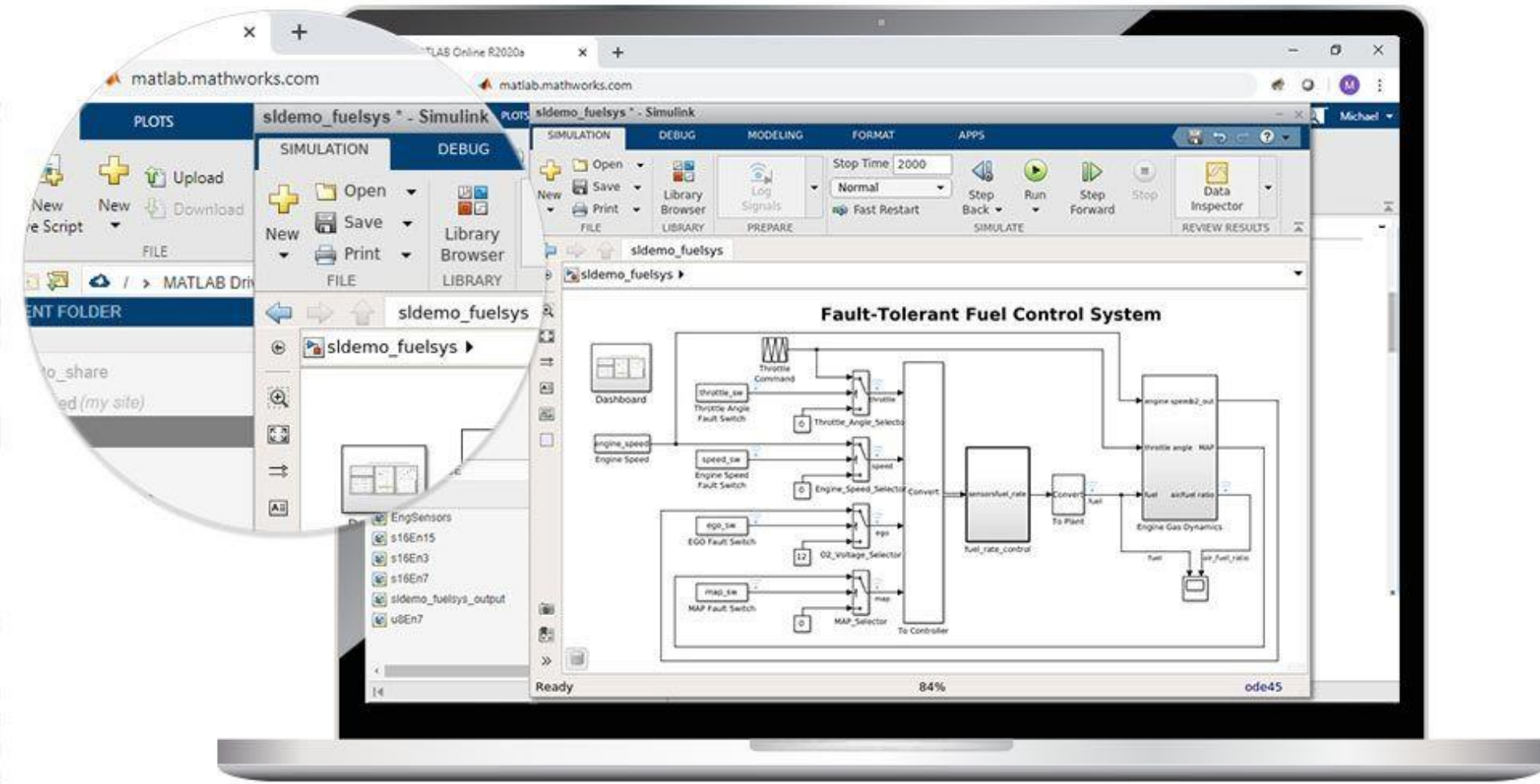
```
1 function m = magicsquare(n)
2   if ischar(n)
3       n=str2double(n);
4   end
5   m = magic(n);
6   disp(m)
```

The code defines a function named `magicsquare` that takes an input `n`. It checks if `n` is a character using `ischar(n)`. If it is, it converts `n` to a double using `str2double(n)`. Then, it generates a magic square `m` using `magic(n)` and displays it using `disp(m)`. A green checkmark is visible in the top right corner of the editor window.

MATLAB Online



Simulink Online



MATLAB Online

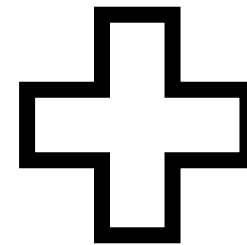
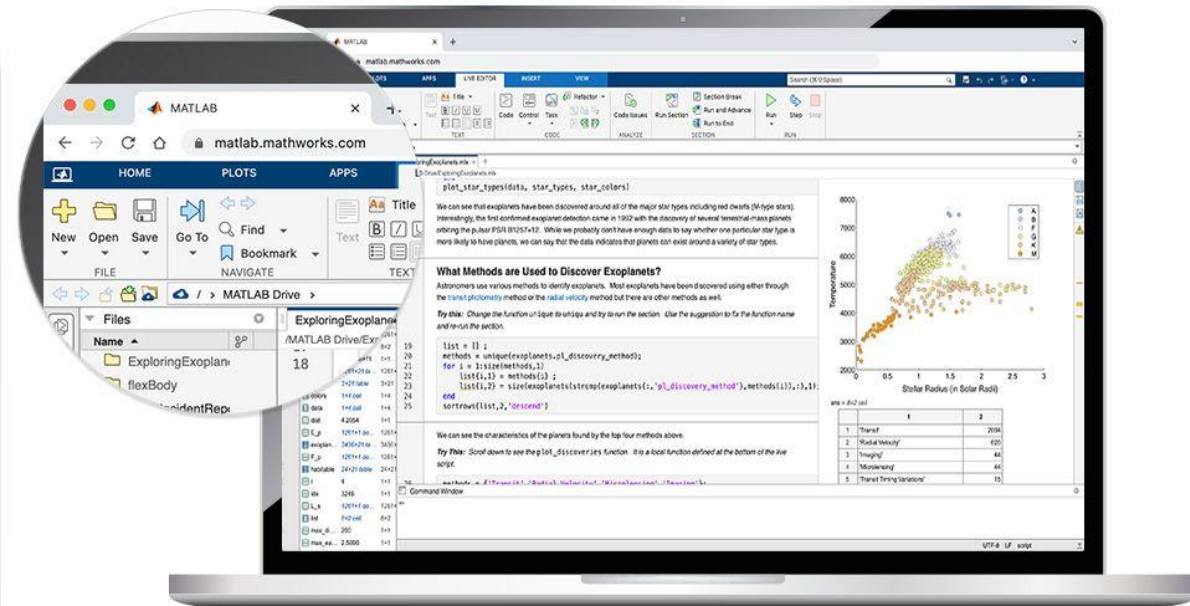
Free

Licensed

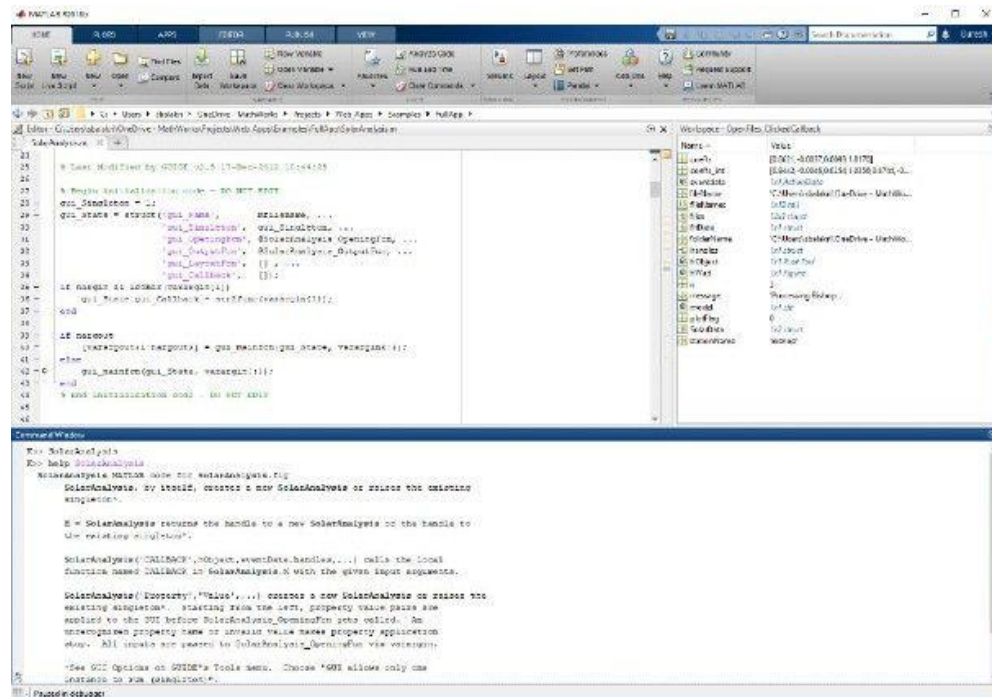
MATLAB Online

	Free version	Licensed version
Compute units	1 vCPU, 4GB RAM	1 vCPUm 4GB RAM
Storage space	5GB	20GB
Available toolboxes	10 commonly used	Tools with active license
Time limit	20h in calendar month	Unlimited

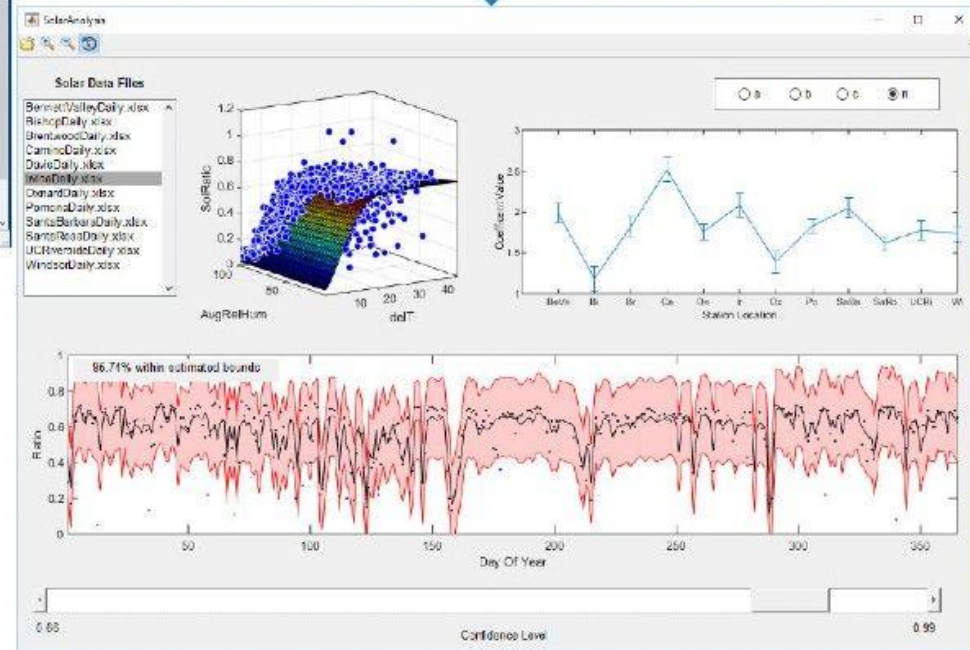
MATLAB Online + GitHub



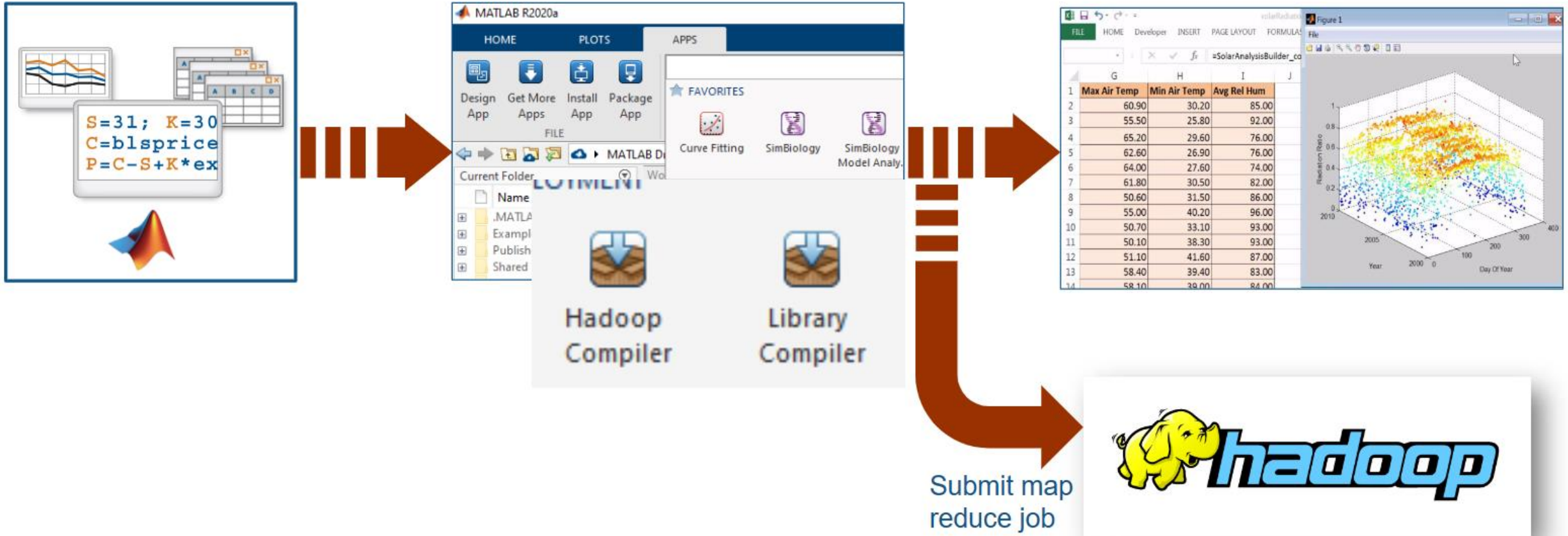
MATLAB Compiler



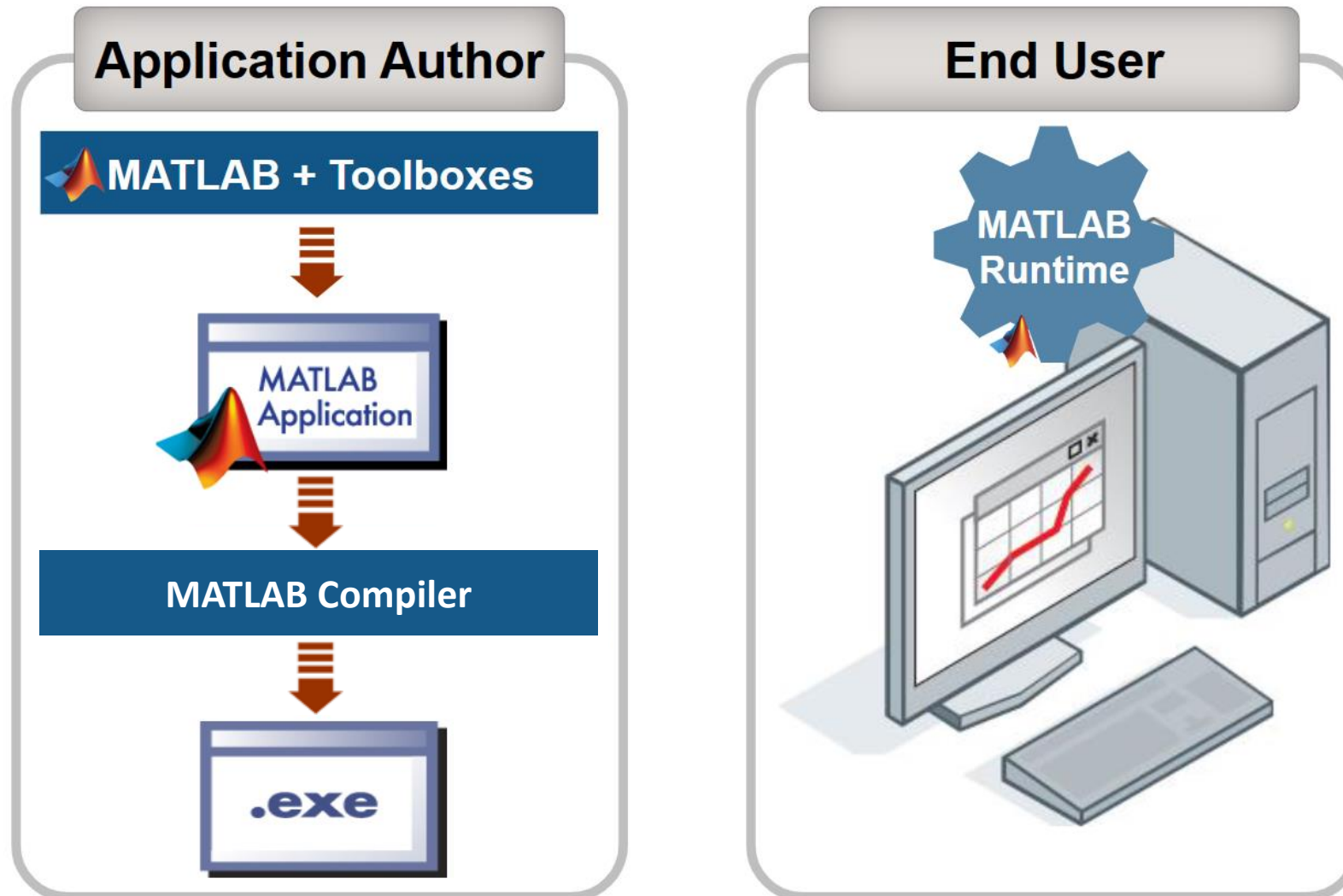
MATLAB Compiler



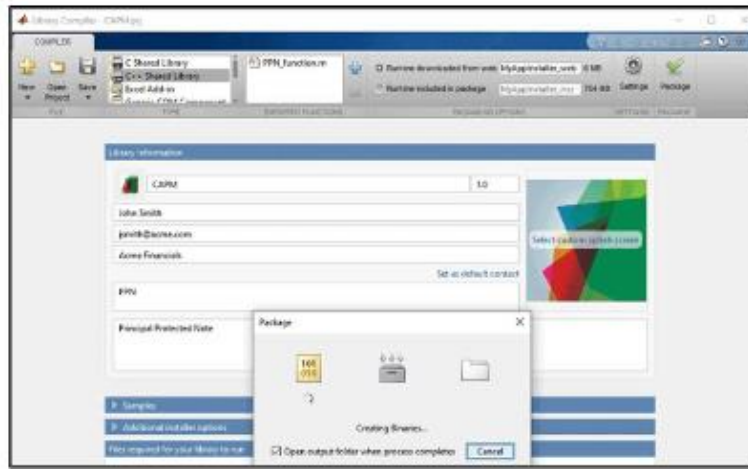
MATLAB Compiler



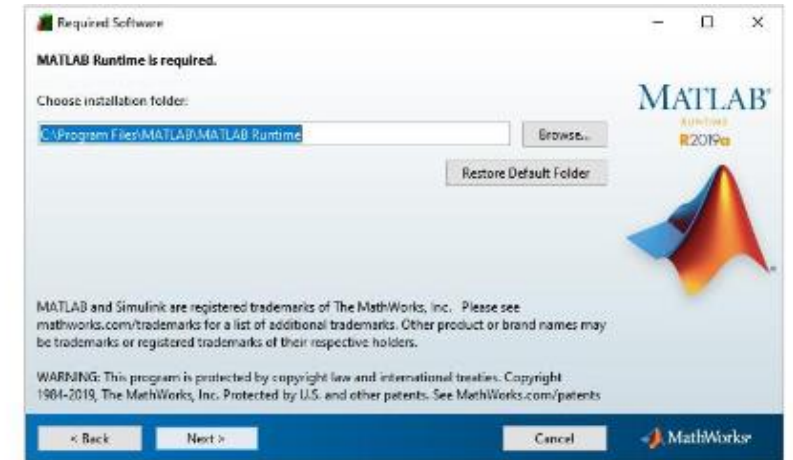
MATLAB Compiler



MATLAB Compiler



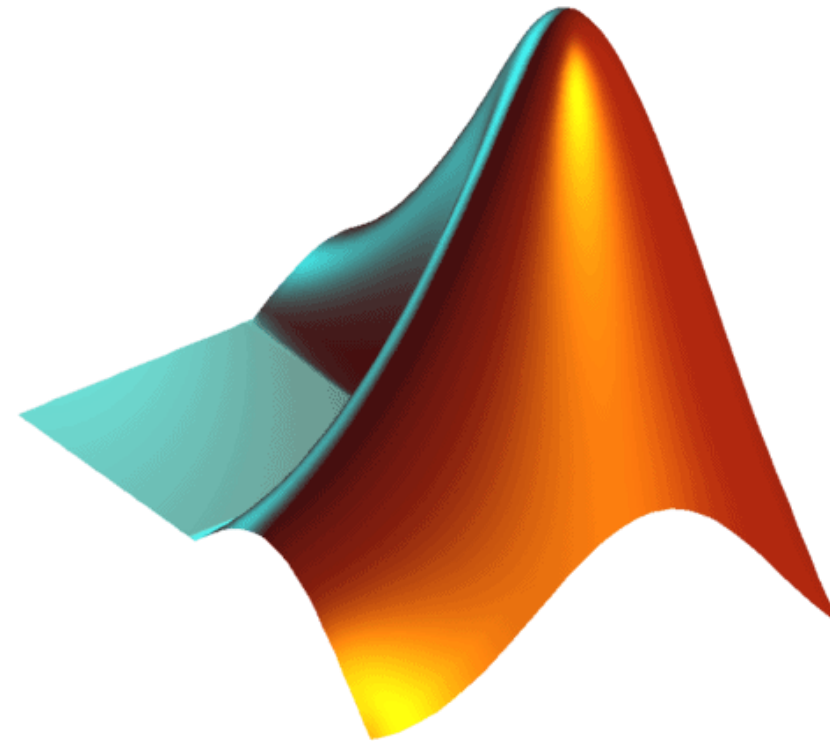
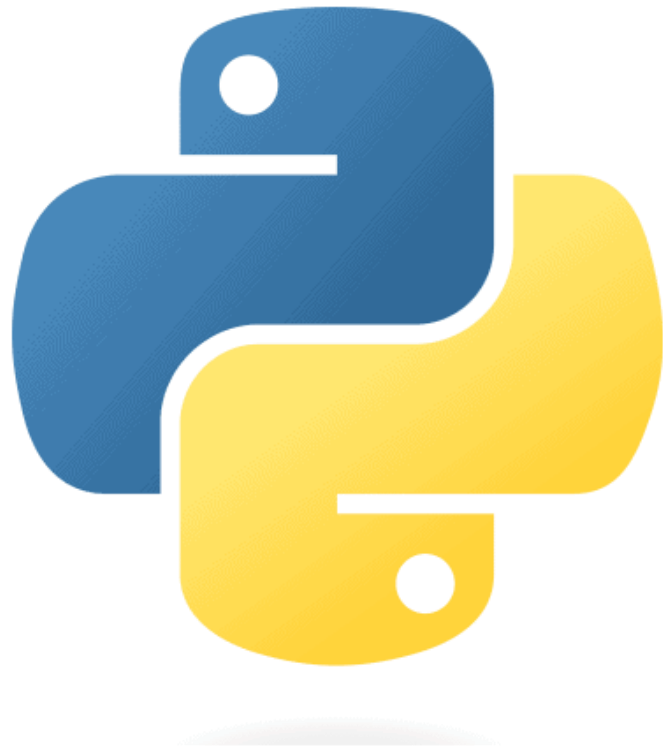
Installer .exe or .sh



Perform dependency analysis to determine what toolboxes / features are used and create installer

When user runs installer it will install a MATLAB Runtime that only includes the features / toolboxes used in the code

MATLAB + Python



MATLAB + Python



Need to **integrate** MATLAB code from a colleague



Facilitate development by using a simplified MATLAB workflow



Need **functionality** only available in MATLAB (e.g. Simulink)

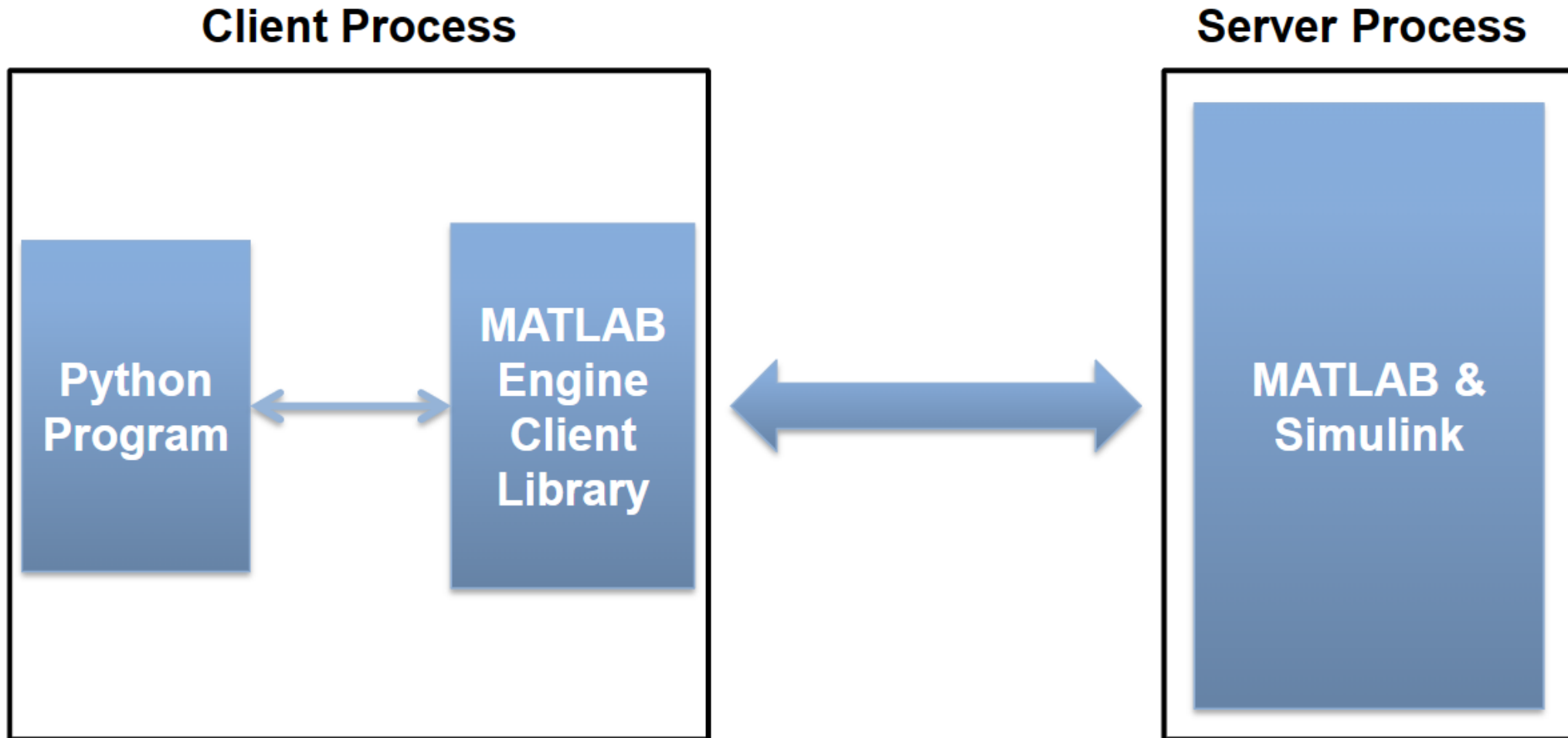


Want to **validate** conclusions by running equivalent MATLAB code



Leverage the work from the MATLAB **community**

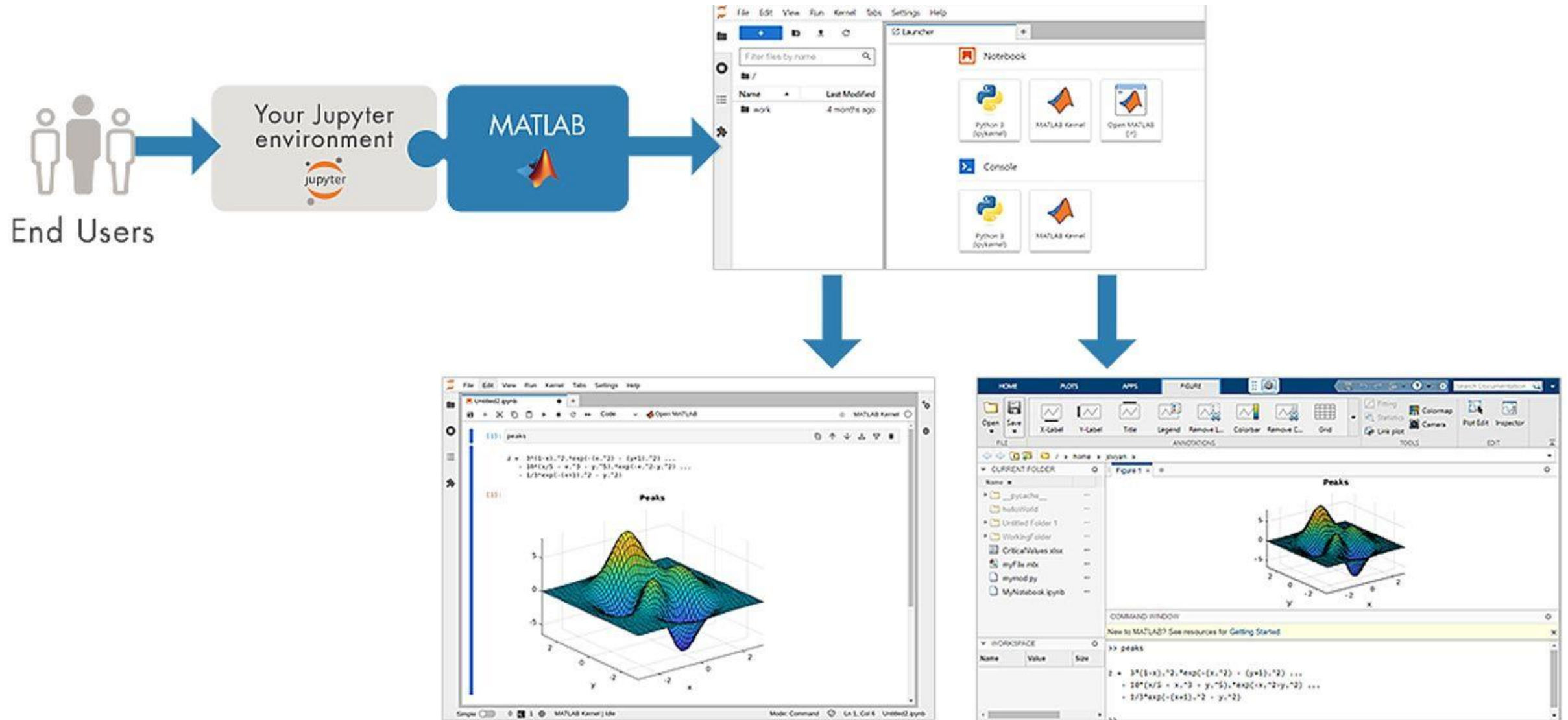
MATLAB Engine API for Python



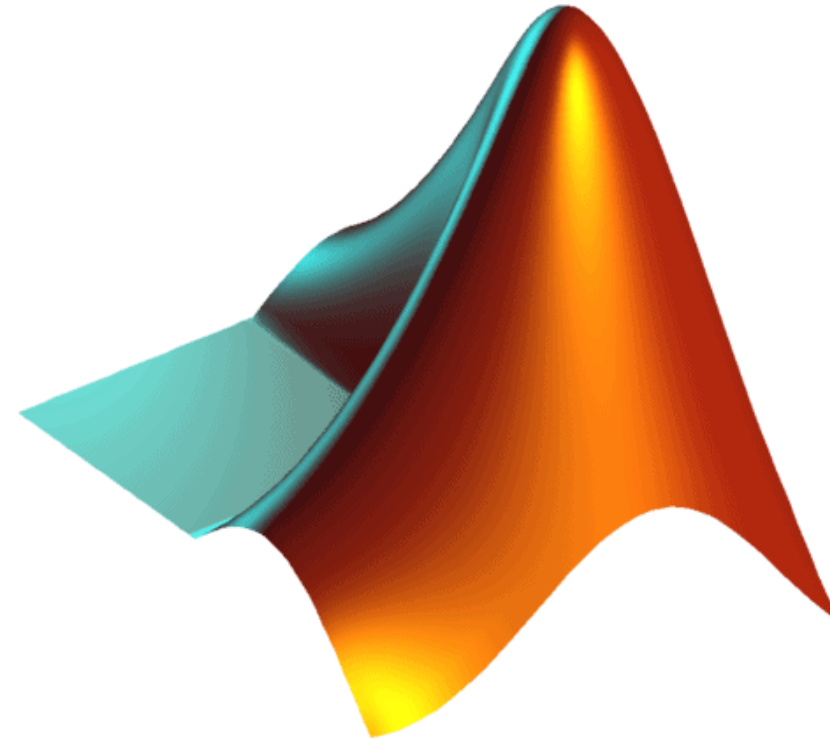
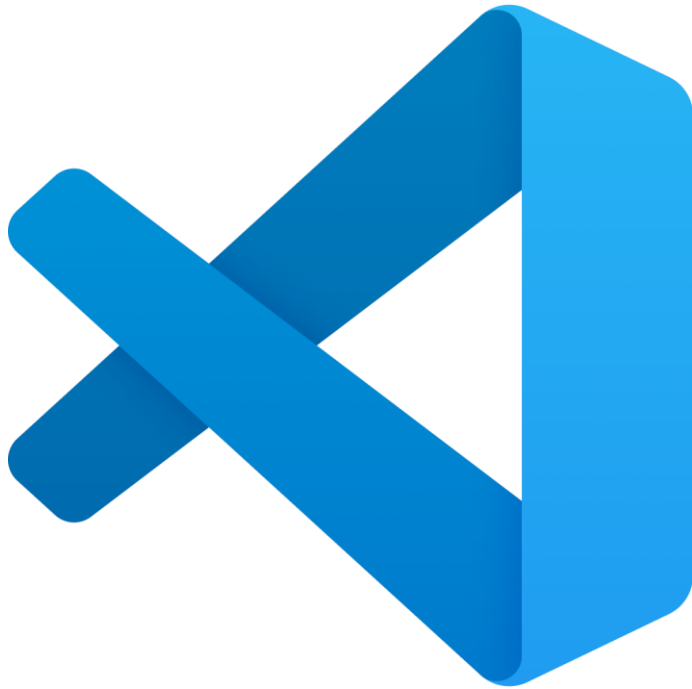
MATLAB Engine API for Python

Release	MATLAB Interface MATLAB Engine	MATLAB Compiler SDK	MATLAB Production Server Client Library
R2023b	3.9, 3.10, 3.11	3.9, 3.10, 3.11	3.9, 3.10, 3.11
R2023a	3.8, 3.9, 3.10	3.8, 3.9, 3.10	3.8, 3.9, 3.10
R2022b	2.7, 3.8, 3.9, 3.10	2.7, 3.8, 3.9, 3.10	3.8, 3.9, 3.10
R2022a	2.7, 3.7, 3.8, 3.9	2.7, 3.8, 3.9	2.7, 3.8, 3.9
R2021b	2.7, 3.7, 3.8, 3.9	2.7, 3.7, 3.8, 3.9	2.7, 3.7, 3.8, 3.9
R2021a	2.7, 3.7, 3.8	2.7, 3.7, 3.8	2.7, 3.7, 3.8
R2020b	2.7, 3.6, 3.7, 3.8	2.7, 3.6, 3.7, 3.8	2.7, 3.6, 3.7, 3.8
R2020a	2.7, 3.6, 3.7	2.7, 3.6, 3.7	2.7, 3.6, 3.7

MATLAB Jupyter Kernel



MATLAB Visual Studio Code Extension



Third-party software



GNU Octave



Matplotlib

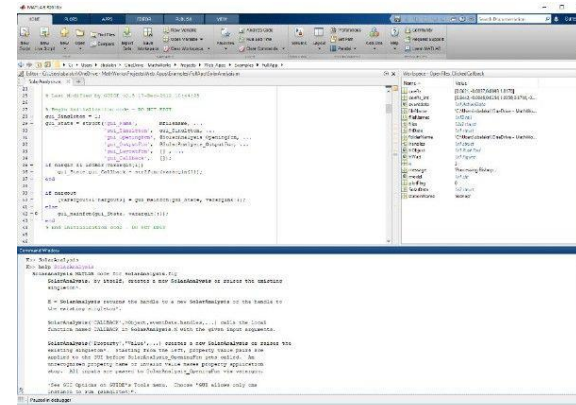
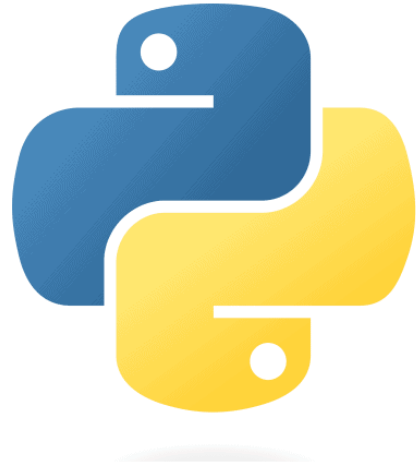


SciPy

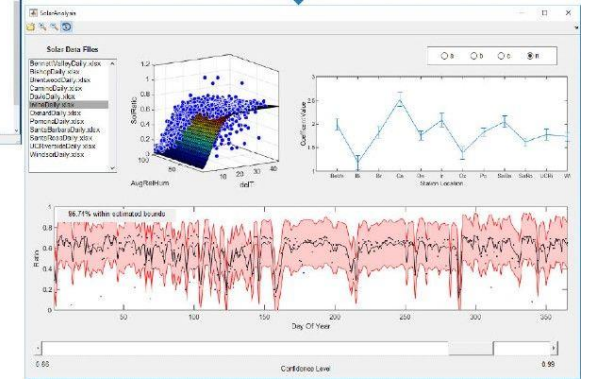


I więcej...

How to run MATLAB without MATLAB?



MATLAB Compiler





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matlab.pl



oprogramowanie-
naukowo-techniczne



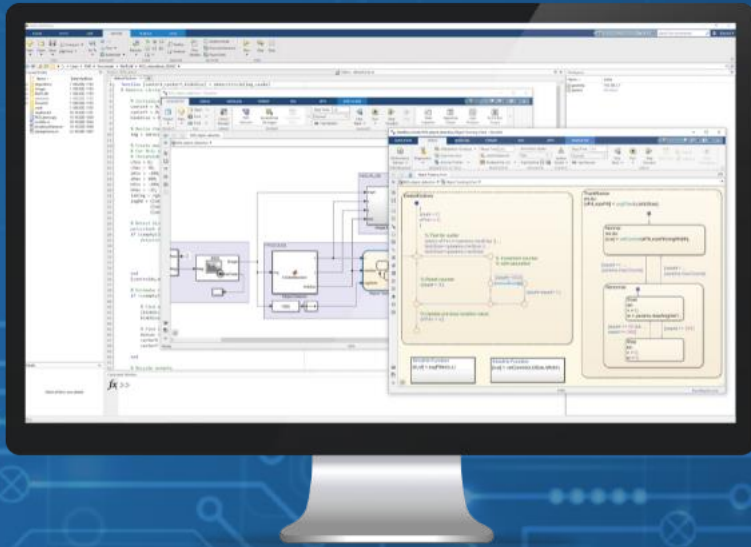
ONT MATLAB



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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

Oprogramowanie Naukowo-Techniczne sp. z o.o.
MATLAB and Simulink authorised reseller for Poland
ul. Pod Fortem 19, 31-302 Kraków, Poland | www.ont.com.pl