

Programowanie w języku Python

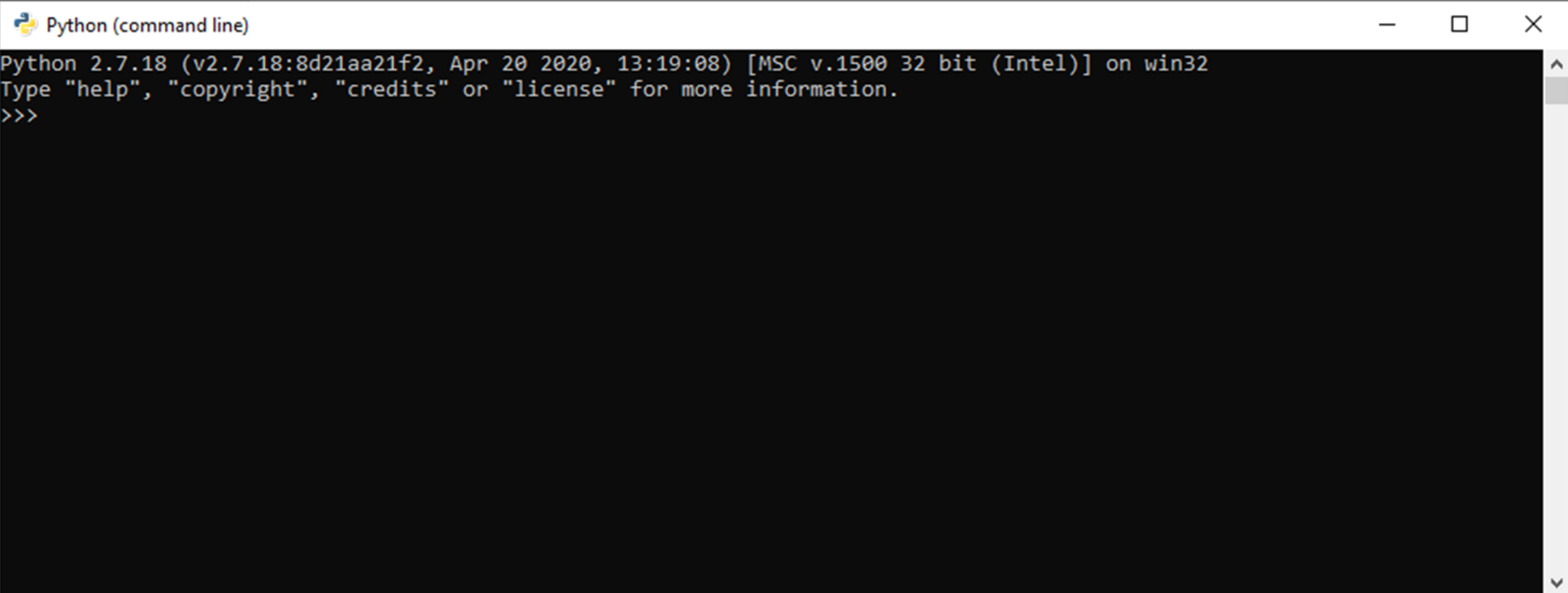
poziom podstawowy

Imię i nazwisko

Data

Dostęp do Konsoli Pythona

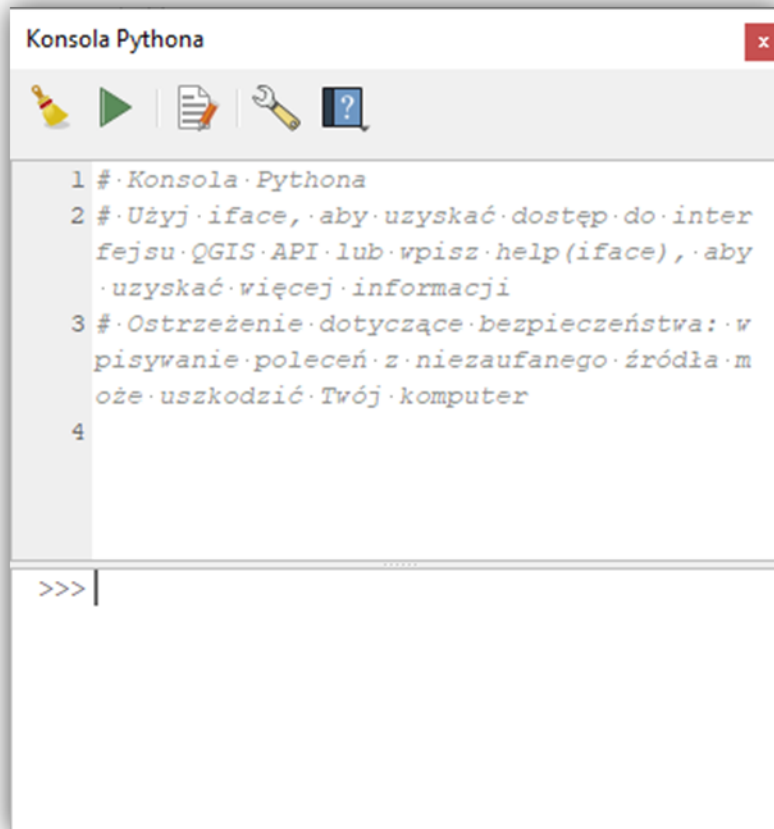
Wiersz poleceń (command line)

A screenshot of a Windows command prompt window titled "Python (command line)". The window has a black background and white text. The text displayed is: "Python 2.7.18 (v2.7.18:8d21aa21f2, Apr 20 2020, 13:19:08) [MSC v.1500 32 bit (Intel)] on win32", "Type 'help', 'copyright', 'credits' or 'license' for more information.", and ">>>". The window includes standard Windows window controls (minimize, maximize, close) in the top right corner and a vertical scrollbar on the right side.

```
Python (command line)
Python 2.7.18 (v2.7.18:8d21aa21f2, Apr 20 2020, 13:19:08) [MSC v.1500 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Wewnątrz programu

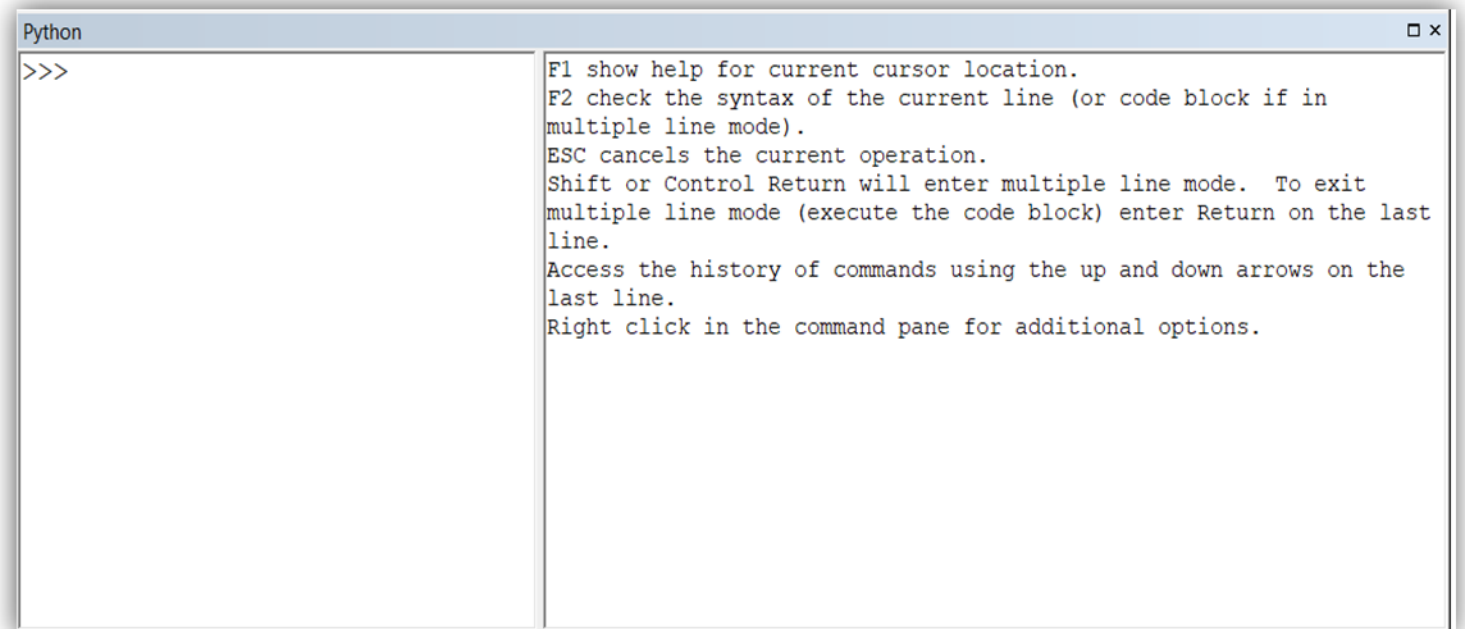
QGIS



The screenshot shows the 'Konsola Pythona' (Python Console) window in QGIS. It features a toolbar with icons for running, saving, and help. The main area contains a multi-line comment in Polish, and the prompt '>>>' is visible at the bottom.

```
1 # Konsola Pythona
2 # Użyj iface, aby uzyskać dostęp do interfejsu QGIS API lub wpisz help(iframe), aby uzyskać więcej informacji
3 # Ostrzeżenie dotyczące bezpieczeństwa: w pisywanie poleceń z niezauważanego źródła może uszkodzić Twój komputer
4
>>> |
```

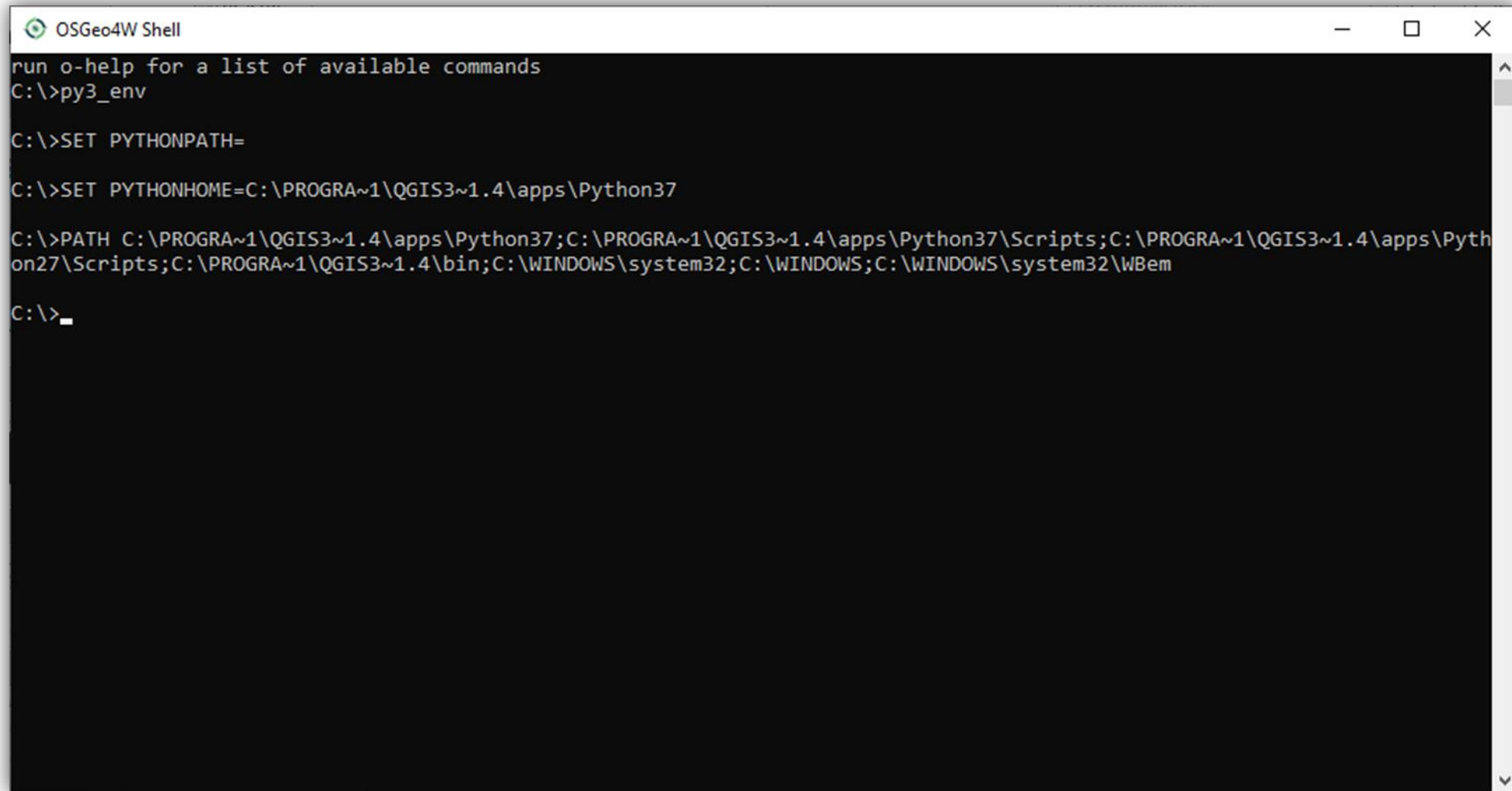
ArcMap



The screenshot shows the 'Python' window in ArcMap. The left pane contains the prompt '>>>', and the right pane displays a list of keyboard shortcuts for the Python environment.

```
>>>
F1 show help for current cursor location.
F2 check the syntax of the current line (or code block if in multiple line mode).
ESC cancels the current operation.
Shift or Control Return will enter multiple line mode. To exit multiple line mode (execute the code block) enter Return on the last line.
Access the history of commands using the up and down arrows on the last line.
Right click in the command pane for additional options.
```

OSGeo4W Shell – instalowany z QGIS



```
OSGeo4W Shell
run o-help for a list of available commands
C:\>py3_env

C:\>SET PYTHONPATH=

C:\>SET PYTHONHOME=C:\PROGRA~1\QGIS3~1.4\apps\Python37

C:\>PATH C:\PROGRA~1\QGIS3~1.4\apps\Python37;C:\PROGRA~1\QGIS3~1.4\apps\Python37\Scripts;C:\PROGRA~1\QGIS3~1.4\apps\Python37\Scripts;C:\PROGRA~1\QGIS3~1.4\bin;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\system32\Wbem

C:\>_
```

IDLE (Python GUI) - wbudowany

```
Python 2.7.18 Shell
File Edit Shell Debug Options Window Help
Python 2.7.18 (v2.7.18:8d21aa21f2, Apr 20 2020, 13:19:08) [MSC v.1500 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>

IDLE Shell 3.10.7
File Edit Shell Debug Options Window Help
Python 3.10.7 (tags/v3.10.7:6cc6b13, Sep 5 2022, 14:08:36) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> |
```

Ln: 3 Col: 0

IDE

ang. Integrated Development Environment – Zintegrowane środowisko programistyczne

- PyCharm
- Visual Studio Code
- Jupyter Notebook (Anaconda)
- Spyder (Anaconda)
- Notepad ++

Dokumentacja i przykłady

Dokumentacja języka Python

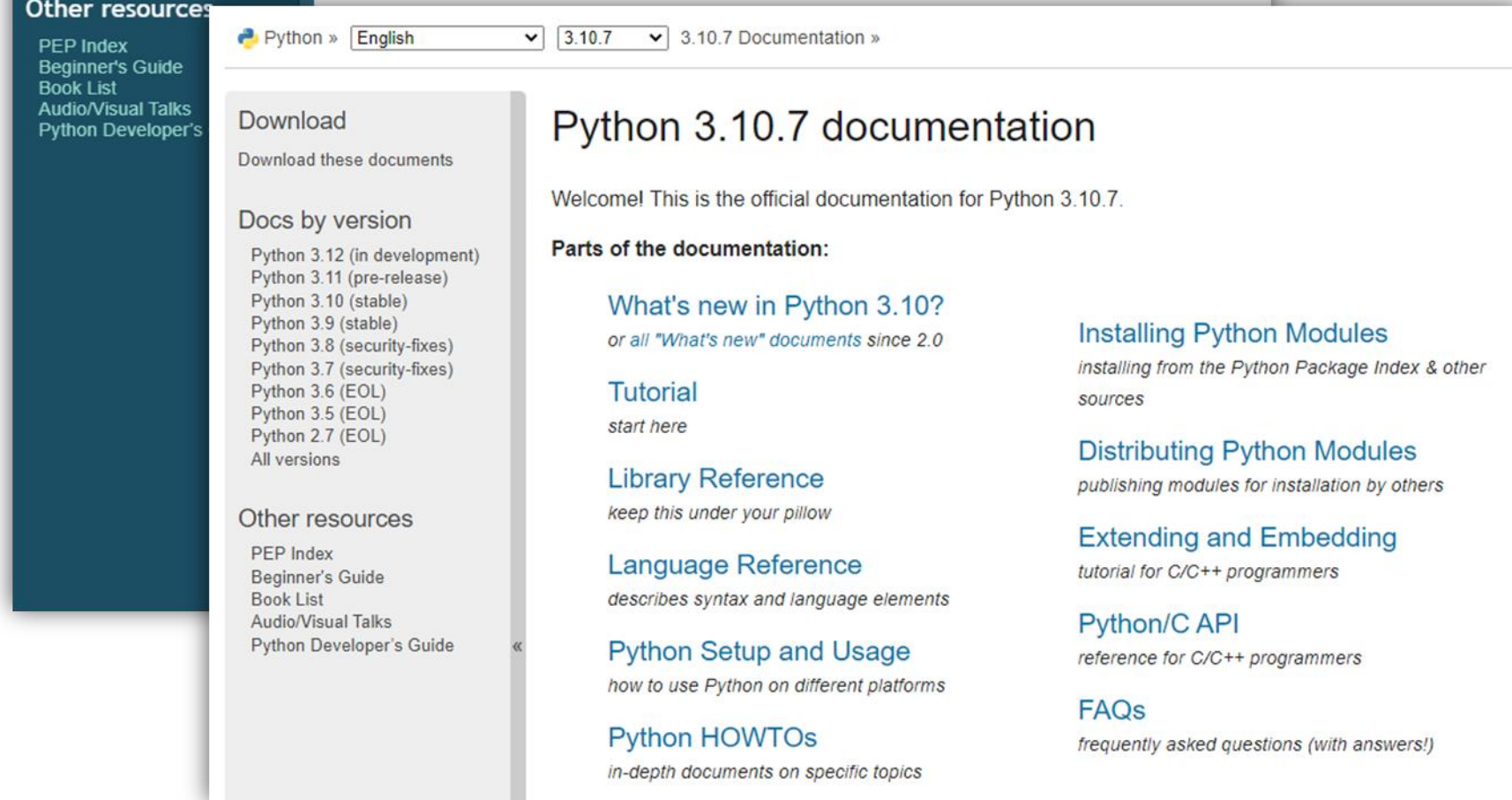
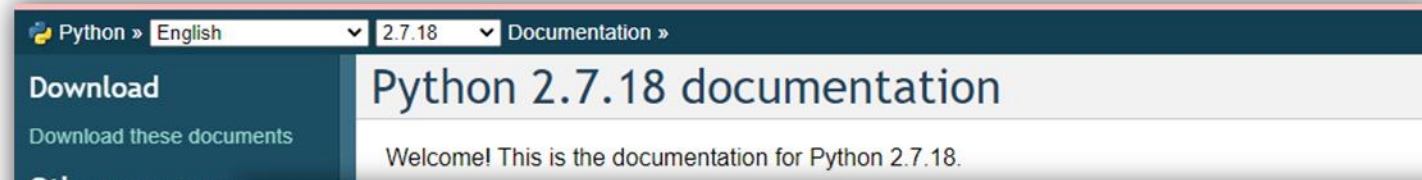


Sfinansowano ze środków
NARODOWEGO FUNDUSZU
OCHRONY ŚRODOWISKA
i GOSPODARKI WODNEJ

<https://www.python.org/doc/>

<https://docs.python.org/2/>

Sprawdzenie wersji Pythona
`print sys.version_info`



Przykładowy skrypt

```
1 # -*- coding: cp1250 -*-
2 """
3 Informacje o skrypcie
4 autor: AP
5 data:08.01.2018
6 """
7 a="Zaczynam uczyć się Pythona!" #komentarz
8 #komentarz
9 print a
```

Zapisany jako plik tekstowy z rozszerzeniem *.py
np. przykladowy.py

Wynik:

```
>>> execfile(r'G:\przykladowy.py')
Zaczynam uczyć się Pythona!
```


Kodowanie – Polskie znaki

```
# -*- coding: cp1250 -*-
```

```
# -*- coding: utf-8 -*-
```

Zadania dodatkowe


```
x = '*'  
while len(x)<20:  
    print x.center(20, ' ')  
    x = x+'*'
```

Choinka z bombkami



Uruchamianie skryptów

```
Wiersz polecenia - python string_zad_3.py
Microsoft Windows [Version 10.0.19044.2006]
(c) Microsoft Corporation. Wszelkie prawa zastrzeżone.

C:\Users\... >cd C:\Users\...\Desktop\

C:\Users\...\Desktop>python string_zad_3.py
('D\xeaby, buki, \x9cwierki i sosny/n \nPrzem\xft3wcie gromkim g\xb3osem/n \nBy nikt si\xea nie odwa\xbfy\xb3/n \nU\x9cmi
erci\xe6 was topora ciosem.', '\n')
Podaj drzewa zamiast 'Drby': -
```

uruchomienie skryptu

wprowadź tekst



The image shows a Python IDE with two windows. The left window is a code editor for a file named 'string_zad_3.py'. The code defines a string 'wiersz' and four input prompts for tree types: 'Dęby', 'buk', 'świerki', and 'sosny'. It then uses these inputs to format a larger string 'wiersz2'. The right window is the 'Python 3.8.2 Shell', which shows the execution of the script. The output includes the same prompts as the code. A red box highlights the prompt 'Podaj drzewa zamiast 'Dęby':' with the text 'wprowadź tekst' (enter text) next to it. In the code editor, a red box highlights the 'Run Module' option in the 'Run' menu, with the text 'uruchomienie skryptu' (script execution) next to it. The status bars at the bottom show 'Ln: 20 Col: 0' for the code editor and 'Ln: 10 Col: 29' for the shell.

```
# -*- coding: utf-8 -*-
wiersz = """Dęby, buki, świerki i sosny/n
Przemówcie gromkim głosem/n
By nikt się nie odważył/n
Uśmiercić was topora ciosem."/n

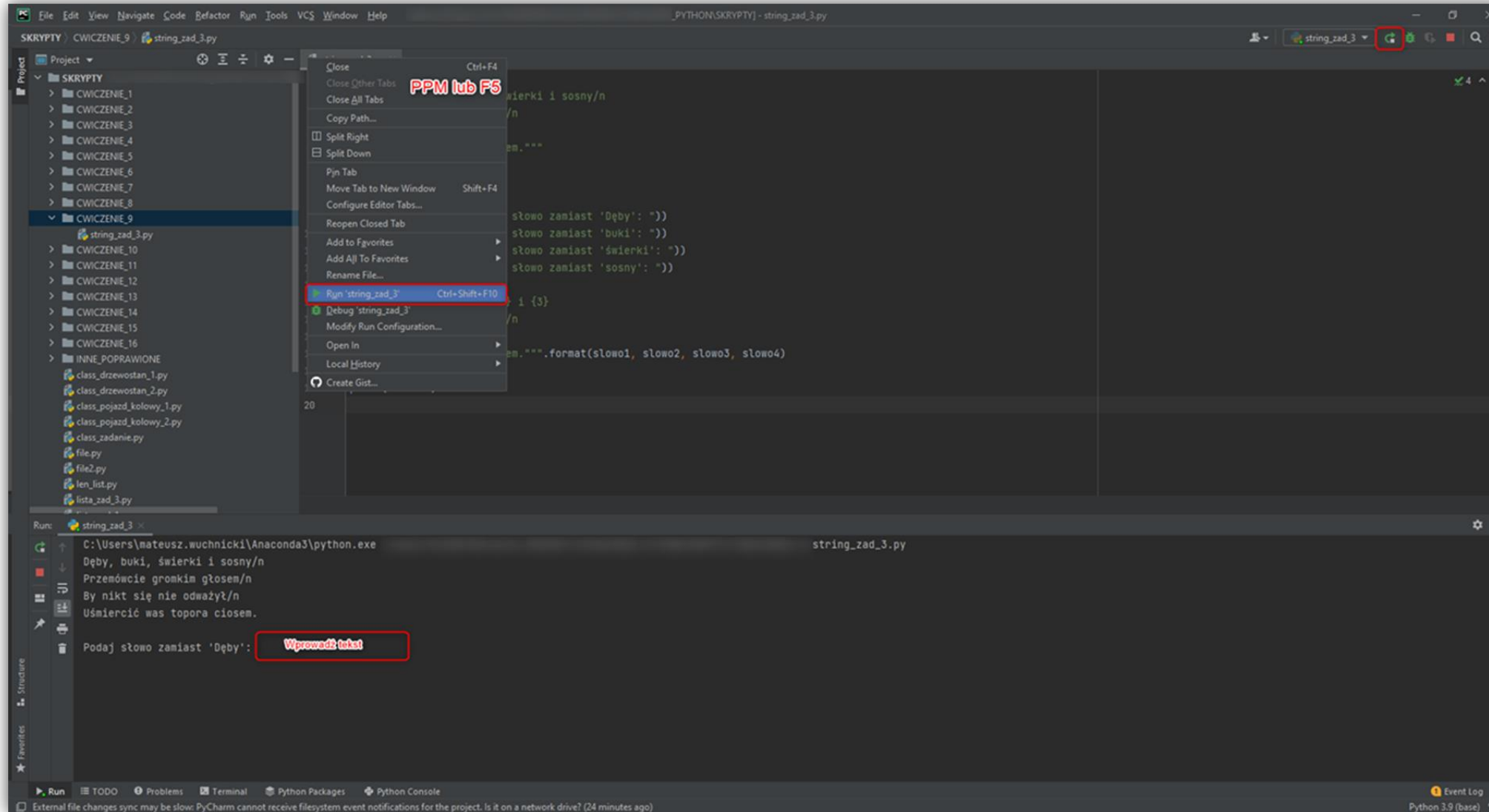
print(wiersz, '\n')

drzewa1 = str(input("Podaj drzewa zamiast 'Dęby': "))
drzewa2 = str(input("Podaj drzewa zamiast 'buk': "))
drzewa3 = str(input("Podaj drzewa zamiast 'świerki': "))
drzewa4 = str(input("Podaj drzewa zamiast 'sosny': "))

wiersz2 = """{0}, {1}, {2} i {3}
Przemówcie gromkim głosem/n
By nikt się nie odważył/n
Uśmiercić was topora ciosem.""".format(drzewa1, drzewa2, drzewa3, drzewa4)

print(wiersz2)
```

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: string_zad_3.py =
Dęby, buki, świerki i sosny/n
Przemówcie gromkim głosem/n
By nikt się nie odważył/n
Uśmiercić was topora ciosem.
Podaj drzewa zamiast 'Dęby':



The image shows the Spyder Python IDE interface. The left pane displays a Python script named `BMI_adv.py` with the following code:

```
1 #Simple BMI calculator using python
2 def BMI_calculator(height, weight):
3     return round((weight / height**2),2)
4
5 while True:
6     try:
7         h = float(input("Wprowadź swój wzrost w meterach: "))
8         w = float(input("Wprowadź swoją wagę w kg: "))
9         break
10    except ValueError:
11        print(f"\n{'*' * 100}\nCoś poszło nie tak. Użyj kropki jako separatora dziesiętnego. \n"
12              f"Spróbuj ponownie...\n{'*' * 100}\n")
13
14 print(f"\n{'*' * 100}\nWitam w kalkulatorze BMI.\n{'*' * 100}\n")
15 bmi = BMI_calculator(h, w)
16 print("Twoje BMI wynosi: ", bmi)
17
18 if bmi <= 18.5:
19     print("Masz niedowagę.")
20 elif 18.5 < bmi <= 24.9:
21     print("Twoja waga jest prawidłowa.")
22 elif 25 <= bmi <= 29.9:
23     print("Masz nadwagę.")
24 elif 30 <= bmi <= 34.9:
25     print("Masz otyłość I stopnia")
26 elif 35 <= bmi <= 39.9:
27     print("Masz otyłość II stopnia")
28 else:
29     print("Masz otyłość III stopnia")
30
```

The right pane shows the IPython console output:

```
Python 3.7.9 (tags/v3.7.9:13c94747c7, Aug 17 2020, 18:58:18) [MSC v.1900 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.22.0 -- An enhanced Interactive Python.

In [1]: runfile('
                SKRYPTY/CWICZENIE_2')
Reloaded modules: ipykernel, ipykernel.version, ipykernel.connect, ipykernel.kernelapp, zmq.eventloop,
zmq.eventloop.ioloop, tornado.platform, tornado.platform.asyncio, tornado.gen, zmq.eventloop.zmqstream,
ipython.genutils.importstring, ipykernel.iostream, jupyter_client.session, jupyter_client.jsonutil,
jupyter_client.adapter, ipykernel.heartbeat, ipykernel.ipkernel, IPython.utils.tokenutil, ipykernel.comm,
ipykernel.comm.manager, ipykernel.comm.comm, ipykernel.kernelbase, tornado.queues, tornado.locks,
ipykernel.jsonutil, ipykernel.zmqshell, IPython.core.payloadpage, ipykernel.displayhook, ipykernel.datapub,
ipykernel.serialize, ipykernel.pickleutil, ipykernel.codeutil, ipykernel.eventloops, ipykernel.parentpoller, PIL,
PIL.version, PIL.Image, PIL.ImageMode, PIL.TiffTags, PIL.Binary, PIL.util, PIL.Imaging, cffi, cffi.api,
cffi.lock, cffi.error, cffi.model, PIL.PngImagePlugin, PIL.ImageChops, PIL.ImageFile, PIL.ImagePalette,
PIL.GimpGradientFile, PIL.GimpPaletteFile, PIL.ImageColor, PIL.PaletteFile, PIL.ImageSequence, pyparsing, cycler,
kivisolver, dateutil.rule, win32api, win32security, ntsecuritycon, IPython.core.completerlib, storemagic,
autoreload, mpl_toolkits.mplot3d, mpl_toolkits.mplot3d.axes3d, mpl_toolkits.mplot3d.art3d,
mpl_toolkits.mplot3d.proj3d, mpl_toolkits.mplot3d.axis3d, ipykernel.pylab, ipykernel.pylab.backend_inline,
ipykernel.pylab.config, spyder, spyder.pil_patch

Wprowadź swój wzrost w meterach:
```

A red arrow points to the input prompt in the console, and a red text label **Wprowadź swój wzrost** is placed below it.

Wersje Pythona

Active Python Releases

For more information visit the [Python Developer's Guide](#).

Python version	Maintenance status	First released	End of support	Release schedule
3.10	bugfix	2021-10-04	2026-10	PEP 619
3.9	security	2020-10-05	2025-10	PEP 596
3.8	security	2019-10-14	2024-10	PEP 569
3.7	security	2018-06-27	2023-06-27	PEP 537
2.7	end-of-life	2010-07-03	2020-01-01	PEP 373

Looking for a specific release?

Python releases by version number:

Release version	Release date		Click for more
Python 3.7.14	Sept. 6, 2022	Download	Release Notes
Python 3.8.14	Sept. 6, 2022	Download	Release Notes
Python 3.9.14	Sept. 6, 2022	Download	Release Notes
Python 3.10.7	Sept. 6, 2022	Download	Release Notes
Python 3.10.6	Aug. 2, 2022	Download	Release Notes
Python 3.10.5	June 6, 2022	Download	Release Notes
Python 3.9.13	May 17, 2022	Download	Release Notes
Python 3.10.4	March 24, 2022	Download	Release Notes

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