Wyklad6

December 11, 2019

1 Ścieżka wyszukiwania modulów

[1]:
```
import sys
```

[2]:
```
sys.path
```

[2]:
```
['/home/artur/Dokumenty/Praca/python/Wyklad2019',
 '/home/artur/anaconda3/lib/python37.zip',
 '/home/artur/anaconda3/lib/python3.7',
 '/home/artur/anaconda3/lib/python3.7/lib-dynload',
 '',
 '/home/artur/anaconda3/lib/python3.7/site-packages',
 '/home/artur/anaconda3/lib/python3.7/site-packages/IPython/extensions',
 '/home/artur/.ipython']
```

[3]:
```
import modul1
```

```
␣
↪---------------------------------------------------------------------------

       ModuleNotFoundError                       Traceback (most recent call last)

       <ipython-input-3-683933c2a6b8> in <module>
     ----> 1 import modul1


       ModuleNotFoundError: No module named 'modul1'
```

[4]:
```
sys.path.append("/home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly")
```

[5]:
```
sys.path
```

[5]:
```
['/home/artur/Dokumenty/Praca/python/Wyklad2019',
 '/home/artur/anaconda3/lib/python37.zip',
 '/home/artur/anaconda3/lib/python3.7',
```

```
 '/home/artur/anaconda3/lib/python3.7/lib-dynload',
 '',
 '/home/artur/anaconda3/lib/python3.7/site-packages',
 '/home/artur/anaconda3/lib/python3.7/site-packages/IPython/extensions',
 '/home/artur/.ipython',
 '/home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly']
```

[6]:
```
import modul1
```

[7]:
```
dir(modul1)
```

[7]:
```
['__builtins__',
 '__cached__',
 '__doc__',
 '__file__',
 '__loader__',
 '__name__',
 '__package__',
 '__spec__',
 'modul2',
 'printer',
 'printer_2',
 'zmienna1',
 'zmienna2']
```

[8]:
```
help(modul1)
```

```
Help on module modul1:

NAME
    modul1

DESCRIPTION
    Nasz pierwszy moduł.
    Zawiera definicję dwóch funkcji raz dwóch zmiennych. Porawia się również
funkcja importowania innego modulu.

FUNCTIONS
    printer(x)
        Nasza pierwszy funkcja.

    printer_2(x='', n=1)
        Nasza druga funkcja.

DATA
    zmienna1 = 1
    zmienna2 = [1, 2]
```

```
FILE
    /home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly/modul1.py
```

[ ]:
```
import math
help(math)
```

[10]:
```
modul1.zmienna1
```

[10]:
```
1
```

[11]:
```
modul1.printer("Napis")
```

```
Napis
```

[12]:
```
modul1.printer_2("Napis_",10)
```

```
Napis_Napis_Napis_Napis_Napis_Napis_Napis_Napis_Napis_Napis_
```

[ ]:
```
sys.modules
```

2 Ponowne wczytywanie modułu

[14]:
```
import modul1
```

[15]:
```
modul1.zmienna1
```

[15]:
```
1
```

[16]:
```
from importlib import reload
```

[17]:
```
reload(modul1)
```

[17]:
```
<module 'modul1' from
'/home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly/modul1.py'>
```

[18]:
```
modul1.zmienna1
```

[18]:
```
2
```

3 Przestrzenie nazw

[19]:
```
zmienna1=0
```

[20]:
```
print(zmienna1, modul1.zmienna1,modul1.modul2.zmienna1)
```

```
0 2 4
```

[21]:
```
zmienna1_nowa=0
```

[22]:
```
from modul1b import *
```

[23]:
```
zmienna1_nowa
```

[23]: 4

[24]:
```
from modul1c import *
```

[25]:
```
print(zmienna_publiczna)
```

```
zmienna publiczna
```

[26]:
```
print(_zmienna_prywatna)
```

```
␣
↪---------------------------------------------------------------------------

NameError                                 Traceback (most recent call last)

<ipython-input-26-f747bdb00929> in <module>
----> 1 print(_zmienna_prywatna)


NameError: name '_zmienna_prywatna' is not defined
```

[27]:
```
import modul2c
```

[28]:
```
print(modul2c.zmienna_publiczna)
```

```
zmienna publiczna
```

[29]:
```
print(modul2c._zmienna_prywatna)
```

```
zmienna prywatna
```

4 Co jeszcze możemy odczytać?

[30]:
```
dir(modul1)
```

[30]:
```
['__builtins__',
 '__cached__',
 '__doc__',
 '__file__',
 '__loader__',
 '__name__',
 '__package__',
 '__spec__',
 'modul2',
 'printer',
 'printer_2',
 'zmienna1',
 'zmienna2']
```

[31]:
```
modul1.__builtins__
```

[31]:
```
{'ArithmeticError': ArithmeticError,
 'AssertionError': AssertionError,
 'AttributeError': AttributeError,
 'BaseException': BaseException,
 'BlockingIOError': BlockingIOError,
 'BrokenPipeError': BrokenPipeError,
 'BufferError': BufferError,
 'BytesWarning': BytesWarning,
 'ChildProcessError': ChildProcessError,
 'ConnectionAbortedError': ConnectionAbortedError,
 'ConnectionError': ConnectionError,
 'ConnectionRefusedError': ConnectionRefusedError,
 'ConnectionResetError': ConnectionResetError,
 'DeprecationWarning': DeprecationWarning,
 'EOFError': EOFError,
 'Ellipsis': Ellipsis,
 'EnvironmentError': OSError,
 'Exception': Exception,
 'False': False,
 'FileExistsError': FileExistsError,
 'FileNotFoundError': FileNotFoundError,
 'FloatingPointError': FloatingPointError,
 'FutureWarning': FutureWarning,
 'GeneratorExit': GeneratorExit,
 'IOError': OSError,
 'ImportError': ImportError,
 'ImportWarning': ImportWarning,
```

```
'IndentationError': IndentationError,
'IndexError': IndexError,
'InterruptedError': InterruptedError,
'IsADirectoryError': IsADirectoryError,
'KeyError': KeyError,
'KeyboardInterrupt': KeyboardInterrupt,
'LookupError': LookupError,
'MemoryError': MemoryError,
'NameError': NameError,
'None': None,
'NotADirectoryError': NotADirectoryError,
'NotImplemented': NotImplemented,
'NotImplementedError': NotImplementedError,
'OSError': OSError,
'OverflowError': OverflowError,
'PendingDeprecationWarning': PendingDeprecationWarning,
'PermissionError': PermissionError,
'ProcessLookupError': ProcessLookupError,
'RecursionError': RecursionError,
'ReferenceError': ReferenceError,
'ResourceWarning': ResourceWarning,
'RuntimeError': RuntimeError,
'RuntimeWarning': RuntimeWarning,
'StopAsyncIteration': StopAsyncIteration,
'StopIteration': StopIteration,
'SyntaxError': SyntaxError,
'SyntaxWarning': SyntaxWarning,
'SystemError': SystemError,
'SystemExit': SystemExit,
'TabError': TabError,
'TimeoutError': TimeoutError,
'True': True,
'TypeError': TypeError,
'UnboundLocalError': UnboundLocalError,
'UnicodeDecodeError': UnicodeDecodeError,
'UnicodeEncodeError': UnicodeEncodeError,
'UnicodeError': UnicodeError,
'UnicodeTranslateError': UnicodeTranslateError,
'UnicodeWarning': UnicodeWarning,
'UserWarning': UserWarning,
'ValueError': ValueError,
'Warning': Warning,
'ZeroDivisionError': ZeroDivisionError,
'__IPYTHON__': True,
'__build_class__': <function __build_class__>,
'__debug__': True,
'__doc__': "Built-in functions, exceptions, and other objects.\n\nNoteworthy:
```

```
None is the `nil' object; Ellipsis represents `…' in slices.",
 '__import__': <function __import__>,
 '__loader__': _frozen_importlib.BuiltinImporter,
 '__name__': 'builtins',
 '__package__': '',
 '__spec__': ModuleSpec(name='builtins', loader=<class
'_frozen_importlib.BuiltinImporter'>),
 'abs': <function abs(x, /)>,
 'all': <function all(iterable, /)>,
 'any': <function any(iterable, /)>,
 'ascii': <function ascii(obj, /)>,
 'bin': <function bin(number, /)>,
 'bool': bool,
 'bytearray': bytearray,
 'bytes': bytes,
 'callable': <function callable(obj, /)>,
 'chr': <function chr(i, /)>,
 'classmethod': classmethod,
 'compile': <function compile(source, filename, mode, flags=0,
dont_inherit=False, optimize=-1)>,
 'complex': complex,
 'copyright': Copyright (c) 2001-2016 Python Software Foundation.
 All Rights Reserved.

 Copyright (c) 2000 BeOpen.com.
 All Rights Reserved.

 Copyright (c) 1995-2001 Corporation for National Research Initiatives.
 All Rights Reserved.

 Copyright (c) 1991-1995 Stichting Mathematisch Centrum, Amsterdam.
 All Rights Reserved.,
 'credits':     Thanks to CWI, CNRI, BeOpen.com, Zope Corporation and a cast of
thousands
     for supporting Python development.  See www.python.org for more
information.,
 'delattr': <function delattr(obj, name, /)>,
 'dict': dict,
 'dir': <function dir>,
 'display': <function IPython.core.display.display(*objs, include=None,
exclude=None, metadata=None, transient=None, display_id=None, **kwargs)>,
 'divmod': <function divmod(x, y, /)>,
 'enumerate': enumerate,
 'eval': <function eval(source, globals=None, locals=None, /)>,
 'exec': <function exec(source, globals=None, locals=None, /)>,
 'filter': filter,
 'float': float,
```

```
 'format': <function format(value, format_spec='', /)>,
 'frozenset': frozenset,
 'get_ipython': <bound method InteractiveShell.get_ipython of
<ipykernel.zmqshell.ZMQInteractiveShell object at 0x7f0ff3b88ef0>>,
 'getattr': <function getattr>,
 'globals': <function globals()>,
 'hasattr': <function hasattr(obj, name, /)>,
 'hash': <function hash(obj, /)>,
 'help': Type help() for interactive help, or help(object) for help about
object.,
 'hex': <function hex(number, /)>,
 'id': <function id(obj, /)>,
 'input': <bound method Kernel.raw_input of <ipykernel.ipkernel.IPythonKernel
object at 0x7f0ff3b88f60>>,
 'int': int,
 'isinstance': <function isinstance(obj, class_or_tuple, /)>,
 'issubclass': <function issubclass(cls, class_or_tuple, /)>,
 'iter': <function iter>,
 'len': <function len(obj, /)>,
 'license': Type license() to see the full license text,
 'list': list,
 'locals': <function locals()>,
 'map': map,
 'max': <function max>,
 'memoryview': memoryview,
 'min': <function min>,
 'next': <function next>,
 'object': object,
 'oct': <function oct(number, /)>,
 'open': <function io.open(file, mode='r', buffering=-1, encoding=None,
errors=None, newline=None, closefd=True, opener=None)>,
 'ord': <function ord(c, /)>,
 'pow': <function pow(x, y, z=None, /)>,
 'print': <function print>,
 'property': property,
 'range': range,
 'repr': <function repr(obj, /)>,
 'reversed': reversed,
 'round': <function round>,
 'set': set,
 'setattr': <function setattr(obj, name, value, /)>,
 'slice': slice,
 'sorted': <function sorted(iterable, key=None, reverse=False)>,
 'staticmethod': staticmethod,
 'str': str,
 'sum': <function sum(iterable, start=0, /)>,
 'super': super,
```

```
 'tuple': tuple,
 'type': type,
 'vars': <function vars>,
 'zip': zip}
```

[32]:
```
print(modul1.__cached__)
```

```
/home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly/__pycache__/modul1.cpython-
35.pyc
```

[33]:
```
print(modul1.__doc__)
```

```
Nasz pierwszy moduł.
Zawiera definicję dwóch funkcji raz dwóch zmiennych. Porawia się również funkcja
importowania innego modulu.
```

[34]:
```
print(modul1.__file__)
```

```
/home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly/modul1.py
```

[35]:
```
print(modul1.__loader__)
```

```
<_frozen_importlib_external.SourceFileLoader object at 0x7f0ffbc5ca90>
```

[36]:
```
print(modul1.__name__)
```

```
modul1
```

[37]:
```
print(modul1.__package__)
```

[38]:
```
print(modul1.__spec__)
```

```
ModuleSpec(name='modul1', loader=<_frozen_importlib_external.SourceFileLoader
object at 0x7f0ffbc5ca90>,
origin='/home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly/modul1.py')
```

[39]:
```
print(modul1.modul2.__doc__)
```

```
Nasz drugi moduł.
```

[40]:
```
import math
```

[41]:
```
math.__name__
```

[41]:
```
'math'
```

[42]:
```
math.__package__
```

[42]:
```
''
```

[ ]:
```
dir(math)
```

5 Trochę więcej o “name”

[44]:
```
import modul3
```

```
wynik= 1
wynik= 6
```

[45]:
```
help(modul3)
```

```
Help on module modul3:

NAME
    modul3 - Nasz trzeci moduł.

FUNCTIONS
    grtrthan(x, y)

    lessthan(x, y)

    minmax(test, *args)

FILE
    /home/artur/Dokumenty/Praca/python/Wyklad2019/Moduly/modul3.py
```

[46]:
```
import modul4
```

```
Jestem: modul4
```

[47]:
```
print(modul4.__name__)
```

```
modul4
```

6 Paczki

[48]:
```
import Pakiety.liczby_rzymskie
```

[49]:
```
help(Pakiety.liczby_rzymskie)
```

```
Help on module Pakiety.liczby_rzymskie in Pakiety:

NAME
    Pakiety.liczby_rzymskie - Zamiana liczb arabskich na liczby rzymskie

FUNCTIONS
    liczby_rzymckie()

DATA
    rzym = {1: 'I', 4: 'IV', 5: 'V', 9: 'IX', 10: 'X', 40: 'XL', 50: 'L', …

FILE
    /home/artur/Dokumenty/Praca/python/Wyklad2019/Pakiety/liczby_rzymskie.py
```

[50]:
```
Pakiety.liczby_rzymskie.__package__
```

[50]:
```
'Pakiety'
```

[51]:
```
Pakiety.liczby_rzymskie.liczby_rzymckie()
```

```
Podaj liczbę całkowitą:1456
Liczba 1456 w notacji rzymskiej to: MCDLVI
```

[52]:
```
import Pakiety.Pakiety1.l_rzymskie as liczbyRzymskie
```

[53]:
```
help(liczbyRzymskie)
```

```
Help on module Pakiety.Pakiety1.l_rzymskie in Pakiety.Pakiety1:

NAME
    Pakiety.Pakiety1.l_rzymskie - Zamiana liczb arabskich na liczby rzymskie

FUNCTIONS
    liczby_rzymckie()

DATA
    rzym = {1: 'I', 4: 'IV', 5: 'V', 9: 'IX', 10: 'X', 40: 'XL', 50: 'L', …

FILE
```

/home/artur/Dokumenty/Praca/python/Wyklad2019/Pakiety/Pakiety1/l_rzymskie.py

[54]:
```
dir(liczbyRzymskie)
```

[54]:
```
['__builtins__',
 '__cached__',
 '__doc__',
 '__file__',
 '__loader__',
 '__name__',
 '__package__',
 '__spec__',
 'liczby_rzymckie',
 'rzym']
```

[55]:
```
liczbyRzymskie.__package__
```

[55]:
```
'Pakiety.Pakiety1'
```

[56]:
```
liczbyRzymskie.liczby_rzymckie()
```

```
Podaj liczbę całkowitą:1456
Liczba 1456 w notacji rzymskiej to: MCDLVI
```

[ ]:
```

```