Different types of import techniques

January 25, 2023

1 Different types of import techniques

1.1 import module_name

- You have to use module name before function_name.

[3]:
```
%%python
import math
print(math.factorial(5))
print(math.lcm(12, 18))
print(math.gcd(12, 18))
```

```
120
36
6
```

[4]:
```
%%python
import math
print(factorial(5))
print(lcm(12, 18))
print(gcd(12, 18))
```

```
Traceback (most recent call last):
  File "<stdin>", line 2, in <module>
NameError: name 'factorial' is not defined
```

```
---------------------------------------------------------------------------
CalledProcessError                        Traceback (most recent call last)
Input In [4], in <cell line: 1>()
----> 1␣
 ↪get_ipython().run_cell_magic('python', '', 'import math\nprint(factorial(5))\ print(lcm(12

File␣
 ↪~\AppData\Roaming\Python\Python310\site-packages\IPython\core\interactiveshel..
 ↪py:2347, in InteractiveShell.run_cell_magic(self, magic_name, line, cell)
   2345 with self.builtin_trap:
   2346     args = (magic_arg_s, cell)
-> 2347     result = fn(*args, **kwargs)
   2348 return result
```

```
File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:153, in ScriptMagics._make_script_magic.<locals>.named_script_magic(line,␣
 ↪cell)
    151 else:
    152     line = script
--> 153 return self.shebang(line, cell)

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:305, in ScriptMagics.shebang(self, line, cell)
    300 if args.raise_error and p.returncode != 0:
    301     # If we get here and p.returncode is still None, we must have
    302     # killed it but not yet seen its return code. We don't wait for it,
    303     # in case it's stuck in uninterruptible sleep. -9 = SIGKILL
    304     rc = p.returncode or -9
--> 305     raise CalledProcessError(rc, cell)

CalledProcessError: Command 'b'import math\nprint(factorial(5))\nprint(lcm(12,␣
 ↪18))\nprint(gcd(12, 18))\n'' returned non-zero exit status 1.
```

[52]:
```
%%python
import random
print(random.randint(1, 100000))
```

```
59784
```

[53]:
```
%%python
import random
print(randint(1, 100000))
```

```
Traceback (most recent call last):
  File "<stdin>", line 2, in <module>
NameError: name 'randint' is not defined
```

```
---------------------------------------------------------------------------
CalledProcessError                        Traceback (most recent call last)
Input In [53], in <cell line: 1>()
----> 1␣
 ↪get_ipython().run_cell_magic('python', '', 'import random\nprint(randint(1, 1
 ↪0000))\n')

File␣
 ↪~\AppData\Roaming\Python\Python310\site-packages\IPython\core\interactiveshel
 ↪py:2347, in InteractiveShell.run_cell_magic(self, magic_name, line, cell)
   2345 with self.builtin_trap:
   2346     args = (magic_arg_s, cell)
-> 2347     result = fn(*args, **kwargs)
   2348 return result
```

```
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 ↪py:153, in ScriptMagics._make_script_magic.<locals>.named_script_magic(line,␣
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    151 else:
    152     line = script
--> 153 return self.shebang(line, cell)

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:305, in ScriptMagics.shebang(self, line, cell)
    300 if args.raise_error and p.returncode != 0:
    301     # If we get here and p.returncode is still None, we must have
    302     # killed it but not yet seen its return code. We don't wait for it,
    303     # in case it's stuck in uninterruptible sleep. -9 = SIGKILL
    304     rc = p.returncode or -9
--> 305     raise CalledProcessError(rc, cell)

CalledProcessError: Command 'b'import random\nprint(randint(1, 100000))\n''␣
 ↪returned non-zero exit status 1.
```

1.2 import module_name as alias_name

- You have to use alias_name before function_name

[54]:
```
import math
print(math.factorial(5))
```

```
120
```

[63]:
```
%%python
import math as m
print(m.factorial(5))
```

```
120
```

[66]:
```
%%python
import math as m
print(math.factorial(5))
```

```
Traceback (most recent call last):
  File "<stdin>", line 2, in <module>
NameError: name 'math' is not defined
```

```
---------------------------------------------------------------------------
CalledProcessError                        Traceback (most recent call last)
Input In [66], in <cell line: 1>()
----> 1␣
 ↪get_ipython().run_cell_magic('python', '', 'import math as m\nprint(math.fact rial(5))\n')
```

```
File␣
 ↪~\AppData\Roaming\Python\Python310\site-packages\IPython\core\interactiveshel..
 ↪py:2347, in InteractiveShell.run_cell_magic(self, magic_name, line, cell)
   2345 with self.builtin_trap:
   2346     args = (magic_arg_s, cell)
-> 2347     result = fn(*args, **kwargs)
   2348 return result

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:153, in ScriptMagics._make_script_magic.<locals>.named_script_magic(line,␣
 ↪cell)
    151 else:
    152     line = script
--> 153 return self.shebang(line, cell)

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:305, in ScriptMagics.shebang(self, line, cell)
    300 if args.raise_error and p.returncode != 0:
    301     # If we get here and p.returncode is still None, we must have
    302     # killed it but not yet seen its return code. We don't wait for it,
    303     # in case it's stuck in uninterruptible sleep. -9 = SIGKILL
    304     rc = p.returncode or -9
--> 305     raise CalledProcessError(rc, cell)

CalledProcessError: Command 'b'import math as m\nprint(math.factorial(5))\n''␣
 ↪returned non-zero exit status 1.
```

[68]:
```
%%python
import random as rd
print(rd.randint(1, 1000))
```

```
262
```

1.3 import module1, module2, module3...modulen

- You have to use module_name before function_name

[69]:
```
%%python
import math
import random
import sys
print(math.factorial(5))
print(random.randint(1, 100))
print(sys.version)
```

```
120
76
3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)]
```

[70]:
```
%%python
import math, random, sys
print(math.factorial(5))
print(random.randint(1, 100))
print(sys.version)
```

```
120
26
3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)]
```

1.4 import module_1 as alias_1, module_2 as alias_2...

[72]:
```
%%python
import math as mt, random as rd, sys as sy
print(mt.factorial(5))
print(rd.randint(1, 100))
print(sy.version)
```

```
120
51
3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)]
```

[73]:
```
%%python
import math as mt, random as rd, sys as sy
print(math.factorial(5))
print(random.randint(1, 100))
print(sys.version)
```

```
Traceback (most recent call last):
  File "<stdin>", line 2, in <module>
NameError: name 'math' is not defined
```

```
---------------------------------------------------------------------------
CalledProcessError                        Traceback (most recent call last)
Input In [73], in <cell line: 1>()
----> 1␣
  ↪get_ipython().run_cell_magic('python', '', 'import math as mt, random as rd,  sys as sy\npri

File␣
  ↪~\AppData\Roaming\Python\Python310\site-packages\IPython\core\interactiveshel..
  ↪py:2347, in InteractiveShell.run_cell_magic(self, magic_name, line, cell)
   2345 with self.builtin_trap:
   2346     args = (magic_arg_s, cell)
-> 2347     result = fn(*args, **kwargs)
   2348 return result

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
  ↪py:153, in ScriptMagics._make_script_magic.<locals>.named_script_magic(line,␣
  ↪cell)
```

```
    151 else:
    152     line = script
--> 153 return self.shebang(line, cell)

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:305, in ScriptMagics.shebang(self, line, cell)
    300 if args.raise_error and p.returncode != 0:
    301     # If we get here and p.returncode is still None, we must have
    302     # killed it but not yet seen its return code. We don't wait for it,
    303     # in case it's stuck in uninterruptible sleep. -9 = SIGKILL
    304     rc = p.returncode or -9
--> 305     raise CalledProcessError(rc, cell)

CalledProcessError: Command 'b'import math as mt, random as rd, sys as␣
 ↪sy\nprint(math.factorial(5))\nprint(random.randint(1, 100))\nprint(sys.
 ↪version)\n'' returned non-zero exit status 1.
```

1.5 from module_name import function_name

- You can only use imported functions
- No need to use module_name before function_name

[74]:
```
%%python
from math import factorial
print(factorial(5))
```

```
120
```

[75]:
```
%%python
from math import factorial
print(factorial(5))
print(gcd(12, 18))
```

```
120

Traceback (most recent call last):
  File "<stdin>", line 3, in <module>
NameError: name 'gcd' is not defined
```

```
---------------------------------------------------------------------------
CalledProcessError                        Traceback (most recent call last)
Input In [75], in <cell line: 1>()
----> 1␣
 ↪get_ipython().run_cell_magic('python', '', 'from math import factorial\nprint factorial(5)

File␣
 ↪~\AppData\Roaming\Python\Python310\site-packages\IPython\core\interactiveshel..
 ↪py:2347, in InteractiveShell.run_cell_magic(self, magic_name, line, cell)
  2345 with self.builtin_trap:
```

```
   2346     args = (magic_arg_s, cell)
-> 2347     result = fn(*args, **kwargs)
   2348 return result

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:153, in ScriptMagics._make_script_magic.<locals>.named_script_magic(line,␣
 ↪cell)
    151 else:
    152     line = script
--> 153 return self.shebang(line, cell)

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:305, in ScriptMagics.shebang(self, line, cell)
    300 if args.raise_error and p.returncode != 0:
    301     # If we get here and p.returncode is still None, we must have
    302     # killed it but not yet seen its return code. We don't wait for it,
    303     # in case it's stuck in uninterruptible sleep. -9 = SIGKILL
    304     rc = p.returncode or -9
--> 305     raise CalledProcessError(rc, cell)

CalledProcessError: Command 'b'from math import␣
 ↪factorial\nprint(factorial(5))\nprint(gcd(12, 18))\n'' returned non-zero exit␣
 ↪status 1.
```

1.6 from module_name import fun1, fun2, fun3

[76]:
```
%%python
from math import factorial, gcd, lcm, sqrt
print(factorial(5))
print(gcd(12, 18))
print(lcm(12, 18))
print(sqrt(25))
```

```
120
6
36
5.0
```

1.7 from module import fun as alias

[78]:
```
%%python
from math import factorial as f
print(f(5))
```

```
120
```

[79]:
```
%%python
from math import factorial as f
```

```
print(factorial(5))
```

```
Traceback (most recent call last):
  File "<stdin>", line 2, in <module>
NameError: name 'factorial' is not defined
```

```
---------------------------------------------------------------------------
CalledProcessError                        Traceback (most recent call last)
Input In [79], in <cell line: 1>()
----> 1␣
 ↪get_ipython().run_cell_magic('python', '', 'from math import factorial as f\r print(factoria

File␣
 ↪~\AppData\Roaming\Python\Python310\site-packages\IPython\core\interactiveshel ..
 ↪py:2347, in InteractiveShell.run_cell_magic(self, magic_name, line, cell)
   2345 with self.builtin_trap:
   2346     args = (magic_arg_s, cell)
-> 2347     result = fn(*args, **kwargs)
   2348 return result

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script .
 ↪py:153, in ScriptMagics._make_script_magic.<locals>.named_script_magic(line,␣
 ↪cell)
    151 else:
    152     line = script
--> 153 return self.shebang(line, cell)

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script .
 ↪py:305, in ScriptMagics.shebang(self, line, cell)
    300 if args.raise_error and p.returncode != 0:
    301     # If we get here and p.returncode is still None, we must have
    302     # killed it but not yet seen its return code. We don't wait for it,
    303     # in case it's stuck in uninterruptible sleep. -9 = SIGKILL
    304     rc = p.returncode or -9
--> 305     raise CalledProcessError(rc, cell)

CalledProcessError: Command 'b'from math import factorial as␣
 ↪f\nprint(factorial(5))\n'' returned non-zero exit status 1.
```

1.8 from module import fun1 as alias1, fun2 as alias2, fun3 as alias3....

[80]:
```
%%python
from math import factorial as f, gcd as g, lcm as l, sqrt as s
print(f(5))
print(g(12, 18))
print(l(12, 18))
print(s(25))
```

```
120
6
36
5.0
```

[83]:
```
%%python
from math import factorial as f, gcd as g, lcm as l, sqrt as s
print(f(5))
print(g(12, 18))
print(l(12, 18))
print(s(25))
print(perm(3, 2))
```

```
120
6
36
5.0

Traceback (most recent call last):
  File "<stdin>", line 6, in <module>
NameError: name 'perm' is not defined
```

```
---------------------------------------------------------------------------
CalledProcessError                        Traceback (most recent call last)
Input In [83], in <cell line: 1>()
----> 1␣
 ↪get_ipython().run_cell_magic('python', '', 'from math import factorial as f, gcd as g, lcm

File␣
 ↪~\AppData\Roaming\Python\Python310\site-packages\IPython\core\interactiveshel..
 ↪py:2347, in InteractiveShell.run_cell_magic(self, magic_name, line, cell)
   2345 with self.builtin_trap:
   2346     args = (magic_arg_s, cell)
-> 2347     result = fn(*args, **kwargs)
   2348 return result

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:153, in ScriptMagics._make_script_magic.<locals>.named_script_magic(line,␣
 ↪cell)
    151 else:
    152     line = script
--> 153 return self.shebang(line, cell)

File ~\AppData\Roaming\Python\Python310\site-packages\IPython\core\magics\script.
 ↪py:305, in ScriptMagics.shebang(self, line, cell)
    300 if args.raise_error and p.returncode != 0:
    301     # If we get here and p.returncode is still None, we must have
    302     # killed it but not yet seen its return code. We don't wait for it,
    303     # in case it's stuck in uninterruptible sleep. -9 = SIGKILL
```

```
    304     rc = p.returncode or -9
--> 305     raise CalledProcessError(rc, cell)

CalledProcessError: Command 'b'from math import factorial as f, gcd as g, lcm a␣
 ↪l, sqrt as s\nprint(f(5))\nprint(g(12, 18))\nprint(l(12,␣
 ↪18))\nprint(s(25))\nprint(perm(3, 2))\n'' returned non-zero exit status 1.
```

1.9 from module import *

[85]:
```
from math import *
print(factorial(5))
print(gcd(12, 18))
print(lcm(12, 18))
print(sqrt(25))
print(perm(3, 2))
print(comb(3, 2))
print(radians(90))
```

```
120
6
36
5.0
6
3
1.5707963267948966
```

[88]:
```

```

[88]: 19.7127548704689

[ ]:
```

```

[ ]:
```

```

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