

# "Names page with code" Let's go deep inside!

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## 'Namespace with code 1/5'



How many namespaces can you see?

```
M1.py
                                                                 namespace
                               M1
                       '__builtins__'
                                          builtins
import pprint
                         'pprint'
                                          pprint
                         'value'
value = 3
def F1() :
                        'F1'
                                           F1
    value = 10
                                           '__globals__'
    def F1_inner():
                                                             F1_inner
                                            'value' 10
       value = 20
                                                             '__globals__'
                                           'F1_inner'
                                                             'value'
                                                                        20
```

## 'Namespace with code 2/5'



Which name will be used?

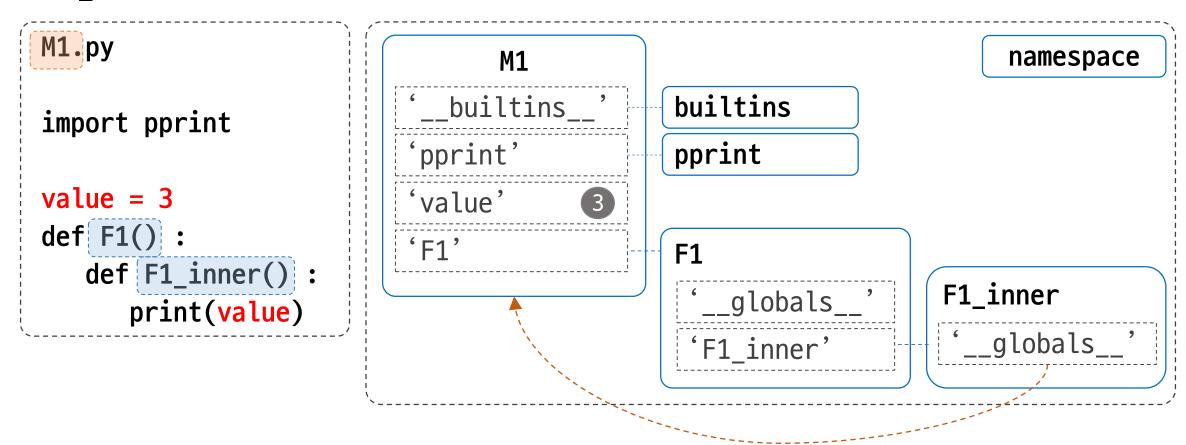
```
M1.py
                                                                    namespace
                                M1
                         '__builtins__'
                                            builtins
value = 3
                          'value'
print(value)
def F1():
                                             F1
    value = 10
                                             '__globals__'
    print(value)
                                              'value'
                                                                F1_inner
    def F1_inner() :
                                                                '__globals__'
        value = 20
                                             'F1_inner'
        print(value)
                                                                'value'
```

20

## 'Namespace with code 3/5'



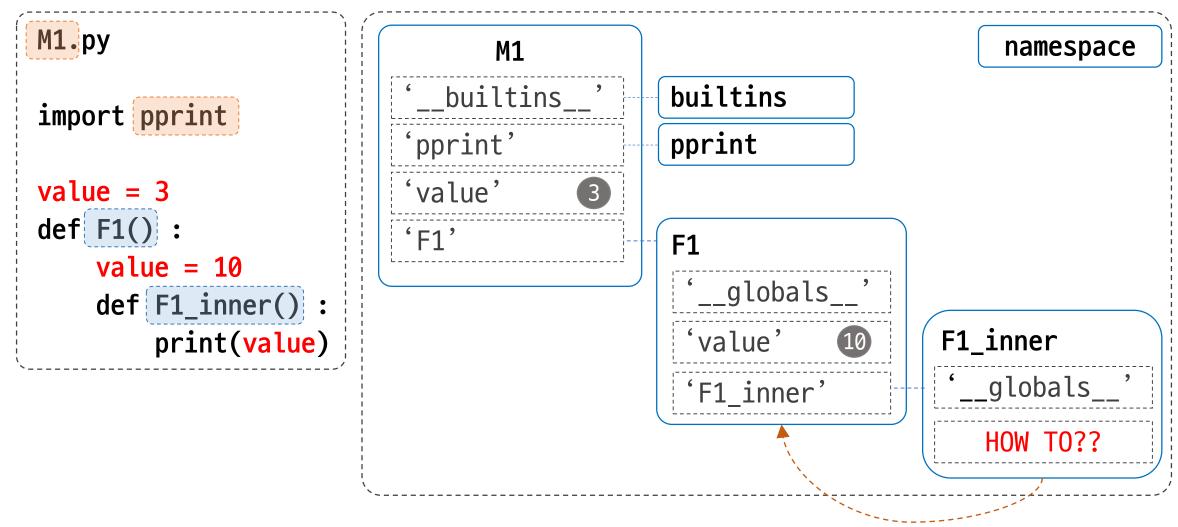
• F1\_inner can use the name 'value' in Globals



# 'Namespace with code 4/5'



• F1\_inner can use the name 'value' in Outer function



### 'Namespace with code 5/5'



How can we use the name 'value' in 'F1\_inner' function?

```
M2.py
                                                                 namespace
                              M2
                                          builtins
              outer
                         ' _builtins__'
value = 3
                                                F1
def F1()*:
              inner
                         'value'
                                           '__globals__'
  value = 10 _
                                                               F1_inner
                                            'value'
  def F1_inner() :
      print(value)
                                                             'globals'
                                            'F1_inner'
                                            closure
                                                              closure '
  def F1_inner() :
     nonlocal value
F1_inner.__closure__[0].cell_contents
                                                 10
                                               ('value', )
F1_inner.__code__.co_freevars
```