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([1, 2, 3, 4], 99),
...]


```
In [119]: pairs = [(x,y) for x in range(2)
...:               for y in range(2)]
```

```
In [120]: pairs
```

```
Out[120]: [(0, 0), (0, 1), (1, 0), (1, 1)]
```

```
In [121]: some_tuples = [(1,2,3), (4,5,6),
(7,8,9)]
```

```
In [122]: flattened = [x for tup in
some_tuples for x in tup]
```

```
In [123]: flattened
```

```
Out[123]: [1, 2, 3, 4, 5, 6, 7, 8, 9]
```

```
In [124]: path = 'myfolder/myfile.txt'
```

```
In [125]: f = open(path)
```

```
-----
-----
```

```
FileNotFoundError
```

```
Traceback (most recent call last)
```

```
<ipython-input-125-6f188b001d67> in
```

```
<module>()
```

```
----> 1 f = open(path)
```

```
FileNotFoundError: [Errno 2] No such file or
directory: 'myfolder/myfile.txt'
```

```
In [126]: for line in f:
```

```
...:     print(line)
...:     ,
...:
```

NameError

Traceback (most recent call last)
<ipython-input-126-195941aaa13e> in
<module>()
----> 1 for line in f:
 2 print(line)
 3 ("
 4

NameError: name 'f' is not defined

In [127]: Class Set:
 File "<ipython-input-127-8b7db9947390>",
 line 1
 Class Set:
 ^

SyntaxError: invalid syntax

In [128]: Class Set:
 File "<ipython-input-128-8b7db9947390>",
 line 1
 Class Set:
 ^

SyntaxError: invalid syntax

```
In [129]: Class Set2:
File "<ipython-input-129-7b52571c7cab>",
line 1
    Class Set2:
        ^
```

SyntaxError: invalid syntax

```
In [130]: class Set2:
...:     def __init__(self,
values=None):
...:         """ctor"""
...:         self.dict = {}
...:
```

```
In [131]: def double(x):
...:     return x *2
...:     def apply_to_one(f):
...:         return f(1)
...:     apply_to_one(double)
...:     x = apply_to_one(double)
...:     x
...:
```

Out[131]: 2

```
In [132]: x = apply_to_one(double)
```

```
In [133]: x
```

Out[133]: 2

```
In [134]: del triple(x):  
File "<ipython-input-134-74497964e48d>",  
line 1  
    del triple(x):  
           ^
```

SyntaxError: invalid syntax

```
In [135]: del triple(x):  
File "<ipython-input-135-74497964e48d>",  
line 1  
    del triple(x):  
           ^
```

SyntaxError: invalid syntax

```
In [136]: def triple(x):  
...:     return x *3  
...:
```

```
In [137]: y = apply_to_one(triple)
```

```
In [138]: y
```

Out[138]: 3

```
In [139]: y = apply_to_one(lambda: x: x + 4)  
File "<ipython-input-139-825508c94c7a>",  
line 1
```

```
y = apply_to_one(lambda: x: x + 4)
                  ^
```

SyntaxError: invalid syntax

```
In [140]: y = apply_to_one(lambda x: x + 4)
```

```
In [141]: y
```

```
Out[141]: 5
```

```
In [142]: def myprint(message = "hello
world"):
```

```
    ...:     print(message)
    ...:
```

```
In [143]: myprint()
```

```
hello world
```

```
In [144]: myprint("hello dino")
```

```
hello dino
```

```
In [145]: def lazy_range(n):
```

```
    ...:     """a lazy version of range()"""
    ...:     i = 0
    ...:     while i < n:
    ...:         yield i
    ...:         i += 1
    ...:
```

```
In [146]: for i in lazy_range(10):
```

```
...:     print(i)
...:
0
1
2
3
4
5
6
7
8
9
```

```
In [147]: for i in range(len(documents)):
...:     do_something(i, document)
...:
```

NameError

Traceback (most recent call last)

<ipython-input-147-4a1303632c56> in

<module>()

```
----> 1 for i in range(len(documents)):
      2     do_something(i, document)
      3
```

NameError: name 'documents' is not defined

```
In [148]: i = 0
```

```
In [149]: i = 0
```

```
In [150]: for document in documents:
...:     do_something(i, document)
...:     i += 1
...:
```


NameError

Traceback (most recent call last)

<ipython-input-150-e165a7abc5ea> in
<module>()

```
----> 1 for document in documents:
      2     do_something(i, document)
      3     i += 1
      4
```

NameError: name 'documents' is not defined

```
In [151]: for i, document in
enumerate(documents):
...:     do something(i, document)
File "<ipython-input-151-445c7ccc2ae0>",
line 2
    do something(i, document)
                  ^
```

SyntaxError: invalid syntax

```
In [152]: def doubler(f):
```

```
...:     def g(x):
...:         return 2 * f(x)
...:     return g
...:
```

```
In [153]: def f_plus_1(x):
...:     return x + 1
...:
```

```
In [154]: g = doubler(f_plus_1)
```

```
In [155]: print(g(3)) #(3+1) *2
8
```

```
In [156]: def sum(x,y):
...:     return x + y
...:
```

```
In [157]: g = doubler(sum)
```

```
In [158]: print(g(1,2))
```

```
-----
-----
```

TypeError

Traceback (most recent call last)

<ipython-input-158-660f8a833ca4> in

<module>()

----> 1 print(g(1,2))

TypeError: g() takes 1 positional argument

but 2 were given

```
In [159]: def magic(*args, **kwargs):
...:     print("unnamed args: ", args)
...:     print("keyword args: ", kwargs)
...:
```

```
In [160]: magic(1,2, key1 = "NU", key2 =
"rocks!")
unnamed args: (1, 2)
keyword args: {'key1': 'NU', 'key2':
'rocks!'}
```

```
In [161]: def doublerr(f):
...:     """works no matter the input"""
...:     def g(*args, **kwargs):
...:         """pass all arguments to
f"""
...:         return 2 * f(*args,
**kwargs)
...:     return g
...:
```

```
In [162]: g = doublerr(sum)
```

```
In [163]: print g(1,2)
File "<ipython-input-163-f051e3c82a5f>",
line 1
    print g(1,2)
          ^
```

SyntaxError: invalid syntax

```
In [164]: print g(sum(1,2))
File "<ipython-input-164-af37a994cc47>",
line 1
    print g(sum(1,2))
           ^
```

SyntaxError: invalid syntax

```
In [165]: print(g(1,2))
6
```

```
In [166]: print 3
File "<ipython-input-166-71dfe78e2d74>",
line 1
    print 3
         ^
```

SyntaxError: Missing parentheses in call to 'print'. Did you mean print(3)?

```
In [167]: print("3")
3
```

```
In [168]:
```