

# For-else Clauses

---



**Robert Smallshire**

COFOUNDER - SIXTY NORTH

@robsmallshire



**Austin Bingham**

COFOUNDER - SIXTY NORTH

@austin\_bingham

```
for item in iterable:
    if match(item):
        result = item
        break
else: # nobreak
    # No match found
    result = None

# Always come here
print(result)
```

◀ Remember - the else clause is really the **no-break** clause

## Demo



Using `for ... else` in practice.

Ensuring a list contains at least one item divisible by a given value.

Are any of these numbers divisible by **twelve**?

`[2, 5, 9, 37, 28, 14]`

**No, so append a number that is.**

`[2, 5, 9, 37, 28, 14, 12]`

divisor.py x

```
1 items = [2, 25, 9]
2 divisor = 12
3
4 for item in items:
5     if item % divisor == 0:
6         found = item
7         break
8 else: # nobreak
9     items.append(divisor)
10    found = divisor
11
12 print(f"{items} contains {found} which is a multiple of {divisor}")
13
```

Debug: ensure-divisor x

Debugger Console

```
/Users/rjs/.virtualenvs/ensure-divisor/bin/python "/Users/rjs/Library/Application Support/JetBrains/Toolbox/apps/PyCharm
Connected to pydev debugger (build 192.6817.19)
pydev debugger: process 88716 is connecting

[2, 25, 9, 12] contains 12 which is a multiple of 12

Process finished with exit code 0
```

# Loop-else Clauses

## Uncommon

Although for-else is more common than while-else

## Consider readership

Are you sure code maintainers understand?

## Even experts are confused

A majority interviewed at PyCon 2011 did not properly understand loop-else clauses

If loop-else clauses are so  
widely misunderstood,  
what's the alternative?

Refactor! Extract method.



```

1  def ensure_has_divisible(items, divisor):
2      for item in items:
3          if item % divisor == 0:
4              return item
5      items.append(divisor)
6      return divisor
7
8
9  items = [2, 36, 9]
10 divisor = 12
11
12 dividend = ensure_has_divisible(items, divisor)
13
14 print(f"{items} contains {dividend} which is a multiple of {divisor}")
15

```

Easier to **test**

Potentially reusable

```

/Users/rjs/.virtualenvs/ensure-divisor/bin/python /Users/rjs/visning-servers/core-python-advanced-flow-control/build/bui
[2, 36, 9] contains 36 which is a multiple of 12

Process finished with exit code 0

```