

## C: For loops

Primary method for repeating a sequence of steps

1. Statement gives a **loop variable** (or running variable) and an **iterable**
2. Followed by an **indented sequence** of statements

Example:

```
list1 = [10, 20, 30]

for n in list1:
    print( n**2 )
```

Loop variable: n

Iterable: list1

Equivalent to six statements ("unrolling the loop"):

Code	Action
n = list1[0]	n ← 10
print( n**2 )	prints 100
n = list1[1]	n ← 20
print( n**2 )	prints 400
n = list1[2]	n ← 30
print( n**2 )	prints 900

Compact form in *list comprehensions*:

```
list1 = [10, 20, 30]
```

```
squares = [ n**2 for n in list1 ]
```

list1  [10, 20, 30]

squares  [ 10\*\*2, 20\*\*2, 30\*\*2 ]

squares[0]  100

squares[1]  400

squares[2]  900

Detailed example: demo.py in g04