

### Iteration

In Python, iterable is a type of object that can be looped over using a for loop or other iterable methods. Examples of iterable objects include lists, tuples, dictionaries, sets, and strings.

**For loop:** to iterate over a sequence of values such as a list, tuple, or string. The loop body is executed once for each value in the sequence.

**While loop:** to execute a block of code repeatedly as long as a condition is true. The loop body is executed repeatedly until the condition becomes false

**break, continue :** The break statement is used to terminate the loop immediately, while the continue statement is used to skip the current iteration of the loop and move on to the next iteration. Both can be used with both for and while loops.

### Comparison Operators

<code>x == y</code>	<code>x != y</code>	<code>x &gt;= y</code>
<code>x &gt; y</code>	<code>x &lt; y</code>	<code>x &lt;= y</code>

Many other types, such as str, list, tuple, dict, support also comparison operations. Str are compared with alphabetic order. For those container with multiple elements, the comparison process is complicated. Except for the equality, we don't recommend to apply directly comparison operators to lists, sets, tuples (same type & length)

### Boolean Operators

<code>not x</code>	<code>x and y</code>	<code>x or y</code>
<code>x in y</code>	<code>x not in y</code>	<code>all([x, y, z])</code>

those operators usually combine with `if` and `while`

### Examples

```
# iteration by elements or index (by elements more
efficient)
for index, element in enumerate (list):
    bloc of instru ction
for i in range( len (li st)):
    bloc of instru ction
for k,v in dict.i tems():
    bloc of instru ction
#while loop
while condition :
    bloc of instru ction
#etc
```



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