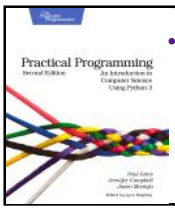
More `str` Operators



- Chapter 5.1 A Boolean Type

Optional reading

String Comparisons

The equality and inequlity operators can be applied to strings:

```
>>> 'a' == 'a'
True
>>> 'ant' == 'ace'
False
>>> 'a' == 'b'
False
>>> 'a' != 'b'
True
```

We can compare two strings for their dictionary order, comparing them letter by letter:

```
>>> 'abracadabra' < 'ace'
True
>>> 'abracadabra' > 'ace'
False
>>> 'a' <= 'a'
True
>>> 'A' < 'B'
True
```

Capitalization matters, and capital letters are less than lowercase letters:

```
>>> 'a' != 'A'
True
>>> 'a' < 'A'
False
```

Every letter can be compared:

```
>>> ',' < '3'
True
```

We can compare a string and an integer for equality:

```
>>> 's' == 3
False
```

We can't compare values of two different types for ordering:

```
>>> 's' <= 3
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>>
TypeError: unorderable types: str() <= int()
```

Testing For Substrings

The operator `in` checks whether a string appears anywhere inside another one (that is, whether a string is a substring of another).

```
>>> 'c' in 'aeiou'
False
>>> 'cad' in 'abracadabra'
True
>>> 'zoo' in 'ooze'
False
```

String length: function `len`

The builtin function `len` returns the number of characters in a string:

```
>>> len('')
0
>>> len('abracadabra')
11
>>> len('Bwa' + 'ha' * 10)
23
```

Summary

Description	Operator	Example	Result of example
equality	`==`	`'cat' == 'cat'`	`True`
inequality	`!=`	`'cat' != 'Cat'`	`True`
less than	`<`	`'A' < 'a'`	`True`
greater than	`>`	`'a' > 'A'`	`True`
less than or equal	`<=`	`'a' <= 'a'`	`True`
greater than or equal	`>=`	`'a' >= 'A'`	`True`
contains	`in`	`'cad' in 'abracadabra'`	`True`
length of `str s`	`len(s)`	`len("abc")`	`3`