

# More str Operators

## String Comparisons

The equality and inequality 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
```

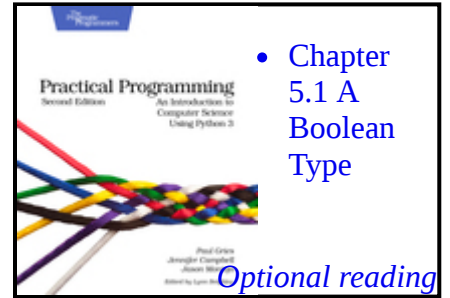
We can't compare values of two different types for ordering:

```
>>> '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

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