Lists and Strings as Objects

Both lists and strings are *sequences* in Python.

A string is a sequence of characters

A list is a sequence of values.

A list of characters is NOT a string

['h', 'e', 'l', 'l', 'o']

Lists and Strings

String to List

Use the *list()* function to convert a string to a list of characters.

```
s = 'trinity'
t = list(s)
print t
```

```
['t','r','i','n','i','t','y']
```


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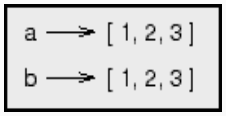
Equivalence vs. Identity

Lists and strings behave differently.

Here lists *a* and *b* refer to two different objects.

They are *equivalent* but not *identical*.

```
>>> a = [1,2,3]
>>> b = [1,2,3]
>>> a is b
False
```



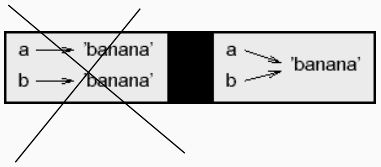
is: The identity operator

Lists and strings behave differently.

Here strings *a* and *b* refer to the same object.

They are *identical* and *equivalent* (==).

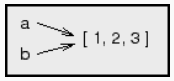
```
>>> a = 'banana'
>>> b = 'banana'
>>> a is b
True
```



Aliasing

We can make two list variables point to the same object.

```
>>> a = [1,2,3]
>>> b = a
>>> b is a
True
```



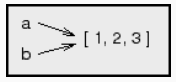
Objects Have Values

[1,2,3] is a list *object* whose *value* is a sequence of integers.

Where Aliasing Really Matters

Aliasing occurs when you pass a list to a function.

```
>>> def func(b):
>>>     b[0] = 0
>>>     print b
>>> a = [1,2,3]
>>> func(a)
[0,2,3]
```



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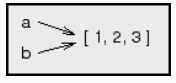

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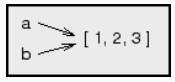

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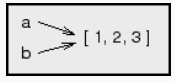

Inclass Exercises

- Write a script that will help me solve crosswords by matching partial words such as 'be**h' with a list of candidate words, such as ['beach', 'beech', 'belch', 'bench', 'berth'].