Introduction To Programming In Python

Lecture Notes, Week of 09-16-2014

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Outline

1 Lists And Objects

Lists
Converting Strings To Lists

- `s.split()` - split a string by whitespace – spaces, tabs, newlines
- `s.split(" ")` - split a string by *single* spaces
- `list(s)` - convert a string into a list of characters

```
s = "The quick\nbrown fox."
print s

t1 = s.split()
print t

t2 = s.split(" ")
print t2

t3 = list(s)
print t3
```

Lists
Problems

I haven't told you everything you can do with lists,
but let's learn as we solve problems.

- Exercise 10-6
- Remove the vowels from a word.
- Exercise 10-7

Objects And Values

An object is a value.

OK, not exactly.

`is` comparison operation - are two objects identical?

- `v = 'banana'` and `w = 'banana'`:
  same object, same value
- `t = [1,2,3]` and `u = [1,2,3]`:
  same value, different objects! (because lists are mutable!)
- variable assignment creates an alias
  both variables refer to (are references to) the same object

List Pitfalls

1. Most methods modify the list and return `None`

```
word = word.strip()
t = t.sort()
```

2. `append`? `+`? `remove`? `del`?

   Right:

   - `t.append(x)`
   - `t = t + [x]`

   Wrong:

   - `t.append([x])`
   - `t = t.append([x])`
   - `t + [x]`
   - `t + x`

3. Make backup copies to avoid "aliasing".

```
orig = t[:]
t.sort()
```