python™

11/13/07

>>> Overview

* lists/arrays
* reading files
* writing files

››› list

Python's lists function much like Java's arrays. Two important differences are that Python's list can hold any number of types and that it has no practical limit to how many elements it can hold.

recipe.py

```
1  recipe = ["milk","eggs","flour","butter","vanilla"]
2  mi = recipe.index("milk")
3  recipe[mi] = "2% milk"
4
5  if "butter" in recipe:
6      recipe.remove("butter")
7      recipe.append("margarine")
8
9  recipe.sort()
10 for ingredient in recipe:
11     print ingredient
```

* slice like strings
* `.index`(e) ~ lowest index of element e in list
* `.count`(e) ~ number of es in list

* `.remove`(e) ~ removes the first e in the list
* `.append`(e) ~ appends e onto the list
* `.extend`(L) ~ appends the list L to the list

* `.sort`() ~ sorts the list in place
* `.reverse`() ~ reverses the list in place

* e `in` list ~ returns whether e is in list

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››› reading files

File processing in Python is somewhat different than Java. However, its easier.

File objects:
* `.readlines()` ~ file as a list of lines
* `.read()` ~ file as a string
* `.readline(e)` ~ next line as string

imdb.py

```
1  filename = "imdb.txt"
2
3  f1 = open(filename,"r")
4
5  for line in f1:
6      print line.upper()
7
8  f1.close()
9  f2 = open(filename,"r")
10
11 line_list = f2.readlines()
12 print line_list[0]
13
14 f2.close()
```

>>> writing files

File processing in Python is somewhat different than Java. However, its easier.

File objects:
* `.readlines()` ~ file as a list of lines
* `.read()` ~ file as a string
* `.readline(e)` ~ next line as string

* `.write(s)` ~ writes s to file
* `.writelines(seq)`
  ~ writes each element to file

imdb.py

```
1  filename = "imdb.txt"
2
3  f1 = open(filename,"r")
4  f2 = open(filename+".new","w")
5
6  for line in f1:
7      l = line.split()[2:-1]
8      f2.write(" ".join(l)+"\n")
9
10 f1.close()
11 f2.close()
12
13
14
```

››› imdb

9.1 243153 The Godfather (1972)
9.1 287728 The Shawshank Redemption (1994)
9.0 139085 The Godfather: Part II (1974)
8.9 76914 Buono, il brutto, il cattivo, Il (1966)
8.8 247454 Pulp Fiction (1994)
8.8 167506 Schindler's List (1993)
...

```
scott @ yossarian ~ $ python  imdb.py
Search? raid
16 8.7 152317 Raiders of the Lost Ark

Search? ark
16 8.7 152317 Raiders of the Lost Ark
117 8.2 121396 Donnie Darko

Search? lost
16 8.7 152317 Raiders of the Lost Ark
241 7.9 6603 The Lost Weekend

Search?
```

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