

Ling 555 — Programming for Linguists

Python — File Input and Output

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Refactoring

homework

Theory

refactoring

style

File I/O

Definition

Refactoring is re-writing and re-structuring code.

Example

- In assignment 4, you were asked to re-factor some of the code from assignment 3. That is, you switched from using lists to dictionaries.
- In assignment 5, we will once again re-factor, taking advantage of loops, conditionals, and file input/output (I/O)

Definition

There's more than one way to do it. Some ways have advantages over others.

Example

```
entries=`grep -E '^[A-Z]{2,},' devil.txt
|cut -f1 -d ','|wc -l`
letters=`grep -E '^[A-Z]{2,},' devil.txt
|cut -f1 -d ','|wc -c`
echo "$letters/$entries"|bc -l
# OR, in one fell swoop
echo "`grep -E '^[A-Z]{2,},' devil.txt
|cut -f1 -d ','|wc -c`/"`grep
-E '^[A-Z]{2,},' devil.txt |cut -f1 -d
','|wc -l`"|bc -l
```

Example

```
# python cat - read in file and spit  
it back out  
inFile='courseBackground.txt'  
fileObject=open(inFile,'r')  
outFile='courseBckgrndProcessed.txt'  
outFileObject=open(inFile,'w')  
contents=fileObject.read()  
fileObject.close()  
outFileObject.write(contents)  
outFileObject.close()
```

File I/O — line by line

homework

Theory

File I/O

files

file-like

Example

```
inFile='courseBackground.txt'  
fileObject=open(inFile,'r')  
outFile='courseBckgrndProcessed.txt'  
outFileObject=open(inFile,'w')  
for line in fileObject:  
    modified=processLine(line)  
    outFileObject.write(modified)
```

Definition

File-like objects can be written to and read from just like files. The ones we will use most often are `stdin`, `stdout`, and `stderr`.

Example

```
# python cat - read in file and spit  
    it back out  
import sys  
contents=sys.stdin.read()  
sys.stdout.write(contents)
```

Example

```
# python process line by line
import sys
for line in sys.stdin:
    modified=processLine(line)
    sys.stdout.write(modified)
```

file-like — command-line usage

homework

Theory

File I/O

files

file-like

Example

```
./slurp.py < input.txt > output.txt
```