Python

{ Lists and Dictionary structures

Chapter 10,11 – Think Python
How to think like a Computer Scientist

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Data Structure list

List (array) = list of data types with indexes. Index can only be integers. 0…N

list of integers

numbers = [33, 49, 76, 88, 1001]

list of strings

colors = [“red”, “blue”, “green”, “pink”, “black”, “polka dot”]

print (numbers[1]) - 49

print (colors[3]) - “pink”

Processing a List

```
for item in colors:
  print (item)
```

- will go through every item in the list from beginning to end

Methods:

numbers.sort()	- Sort the list, can be num or strings
colors.append(“orange”)	- - Add to end of list, new item
colors.remove(“pink")	- Delete the item with value "pink" in list
del colors[0]	- Delete the item at location index 0
Short_colors = colors[1:3]	- Slice colors list from index 1 to 2 and assign to new list

Using lists in the Water Bill assignment

```
customer1 = ["c", 999999997, 5]
customer2 = ["r", 444400003, 444400135]
customer3 = ["x", 10055, 35075]
customer4 = ["c", 2000000, 4500000]
customer5 = ["z", 0, 0]

## list of lists
customerList = [customer1, customer2, customer3, customer4, customer5]

## begin FOR loop - customerList
for customer in customerList:
    customer_code = customer[0]
    start = customer[1]
    last = customer[2]
    bill = 0.0
   do processing…
   do print bill….
## end for loop
```

Data Structure - dictionary

List of data types with indices of almost any data type – also known as key value pair (lookup table). Key is on the left.

```
Stoplight = dict()
Stoplight = {"red": "stop", "yellow":"yield", "green":"go"}

Secretcode  = { "a":1, "u":2, "i":0, "e":1, "o":0}

CustomerType = {“r:"residential", "c":"commercial", "i":"industrial" }

print (Stoplight["yellow"])     - ‘yield’
```