

Objectives:

- Practice text-file I/O
- Practice string manipulation using string methods and sequence operations
- Practice list manipulation using list methods and sequence operations

For today's lab you'll need several files, so start the lab by downloading the following file to your desktop:

<http://www.cs.uni.edu/~fienu/cs051f10/labs/lab6.zip>

Extract this file to the Desktop (or your flash drive) by right-clicking on lab6.zip icon and selecting Extract All.

Suppose you have a small business and are maintaining customer information in a text file, customerData.txt:

```
First Name,Middle Initial,Last Name,Street Address,City,State,Zip Code,Country,Email Address,Telephone Number,Gender,Birthday
Woodrow,C,Wilson,2362 New Street,Eugene,OR,97408,US,Woodrow.C.Wilson@spambob.com,541-337-9453,male,11/26/1984
Eric,A,Stutler,568 Nuzum Court,East Aurora,NY,14052,US,Eric.A.Stutler@trashymail.com,716-652-4943,male,11/24/1947
David,E,Herbert,3678 Seltice Way,Boise,ID,83704,US,David.E.Herbert@spambob.com,208-703-8246,male,2/16/1971
Lee,A,Andrews,3472 Berkshire Circle,Knoxville,TN,37917,US,Lee.A.Andrews@spambob.com,865-566-4125,male,11/15/1973
Rena,D,Adkins,3153 Cardinal Lane,Cleveland Heights,OH,44118,US,Rena.D.Adkins@trashymail.com,216-932-7637,female,1/14/1975
```

• • •

(29,995 more customers)

Each customer record is on a single line with 12 fields separated by commas(','). The first line of the file describes the meaning of the 12 fields on each line: First Name, Middle Initial, Last Name, Street Address, City, State, Zip Code, Country, Email Address, Telephone Number, Gender, and Birthday.

Part A: Write a function `generateList` to read each line of text about a customer and generate a list of fields for that customer. Insert the list of fields for each customer into a customers list. Thus, the customers list is a list-of-lists where each item contains the information about a single customer. The general approach you should take for `generateList` is to:

- read each line from the file (contains all the information about a customer) as a string,
- split the line into a list of strings for the fields,
- insert this list of strings into the customers list.

The file `lab6/customerList.py` contains the following partial program for you to complete.

```
def main():
    """ Open's file, reads customer information into a list, closes the file"""
    custFile = open('customerData.txt','r')
    customerList = generateList(custFile)
    # Echo first and last enter from the customerList
    print "Customer Fields:", customerList[0]
    print "customerList[1]:", customerList[1]
    print "customerList[-1]:",customerList[-1]
    custFile.close()

def generateList(custFile):
    """ Reads customer data from file and returns a list of customers"""
    ##### ADD CODE HERE #####

main()
```

The output from your program should look like:

```
Customer Fields: ['First Name', 'Middle Initial', 'Last Name', 'Street Address', 'City', 'State', 'Zip Code', 'Country', 'Email Address', 'Telephone Number', 'Gender', 'Birthday']
customerList[1]: ['Woodrow', 'C', 'Wilson', '2362 New Street', 'Eugene', 'OR', '97408', 'US', 'Woodrow.C.Wilson@spambob.com', '541-337-9453', 'male', '11/26/1984']
customerList[-1]: ['Paul', 'Y', 'Li', '3763 Big Elm', 'Kansas City', 'MO', '64108', 'US', 'Paul.Y.Li@pookmail.com', '816-838-2944', 'male', '9/6/1962']
```

After you have the program for part A working correctly, raise your hand and we'll check your work.

Part B: From the main program call a function `produceMailingLabels` that processes the customer list to generate a text file (`mailingLabels.txt`) containing mailing labels for only female customers living in Iowa (IA).

The general approach you should take is to:

- pass the `customerList` as a parameter to this function
- open the mailing label file (`mailingLabels.txt`)
- the function should loop over all the customer records in the list
- if a record satisfies the criteria listed above (female from Iowa), build the mailing label by concatenating select elements from the customer record's field list, and
- write the mailing label to the file (`mailingLabels.txt`)

Each mailing label should be formatted as below with 5 blank line separating each label:

Jane Smith
123 Main Street
Cedar Falls, IA 50613

After you have the program for part B working correctly, raise your hand and we'll check your work.

If you complete all parts of the lab, nothing needs to be turned in for this lab. If you do not get done today, then show me the completed lab in next week's lab period. Make sure that you log off the computer and take your USB-drive before you leave.