**Assignment 11**

Address Book   
   
1. In the next two problems, you’ll be building an address book using object oriented   
programming in Python. To begin, you’ll define a Person class. You’ll use this class in   
the next problem to build your address book – each entry in your address book will   
be an instance of the Person class.   
   
To begin, define the \_\_init\_\_ and \_\_str\_\_ methods for the Person class. Read the   
Python documentation if needed to help you understand what \_\_init\_\_ and \_\_str\_\_   
need to do.   
   
Here’s an example interaction in the Python shell demonstrating how your class   
should work after implementing these two methods:   
   
>>> Emily = Person(“Zhang”, “Emily”, “5559358150”,  
“emzhang@mit.edu”)  
>>> print(Emily)  
Zhang, Emily -- Phone Number: 5559358150 -- Email  
Address(es): emzhang@mit.edu  
>>> Wesley = Person(“Graybill”, “Wesley”, “5551940325”,  
[‘wgray496@mit.edu’, ‘wdgraybill@gmail.com’])  
>>> print(Wesley)

Graybill, Wesley -- Phone Number: 5551940325 -- Email  
Address(es): wgray496@mit.edu, wdgraybill@gmail.com

2. In this problem, you will use your Person class from the previous problem to create   
an address book for storing the contacts of your friends and family. It should allow   
you to search the address book for a friend, and return their contact information.   
   
Begin by defining an \_\_init\_\_ method. Don’t forget about Python's builtin dictionary   
data type.   
   
Next, write a method add\_contact that allows you to add a new person to the   
address book.   
   
Finally, write a method lookup\_contact that looks up a contact by last name. The   
method should accept the last name as an argument, and print each contact that   
matches the last name on a new line. As an additional challenge, extend this method   
to allow users to optionally specify a first name to narrow down the results when   
multiple contacts have the same last name. To learn more about optional arguments   
in Python, search for terms such as “optional arguments in Python” and “default   
arguments in Python”.   
   
For example, suppose the contact book contains entries for both Ali Kamil, and his   
wife Sama Kamil. The following is an example output:   
   
>>> a = AddressBook()  
>>> a.add\_person(Person(“Kamil”, “Ali”, … ))  
>>> a.add\_person(Person(“Kamil”, “Sama”, … ))  
>>> a.lookup\_contact(“Kamil”)  
Kamil, Ali -- Phone Number: …  
Kamil, Sama -- Phone Number: …  
>>> a.lookup\_contact(“Kamil”, “Ali”)  
Kamil, Ali -- Phone Number: …