Final Project 300 Points (almost 10% of your grade) Fall 2014 Due: Dec 3, 2014 (Submit on BB by 11:50 pm)

Write a menu driven Python program to read a file containing information for a list of employees, process the data, then present a menu to the user, and at the end print a final report shown below.
Required Menu Operations are:

a. **Read course data from a file to update the list (refer to sample input file below)**
b. **Print employee list content to a file (refer to sample output below)**
c. **Sort the list of students and print it to the monitor:**
    a. **Alphabetical (Based on last name)**
    b. **Descending order (based on Income)**
d. **Print list of employees in a tabular form to the monitor only(Name, Income, Status, taxes, net Income)**
e. **Search the list of employee and print all the details of an employee to the monitor (prompt user for the last name of the employee)**
f. **Add a new employee to the list (Prompt user for data for the new employee)**
g. **Delete an employee from the list (prompt user for the last name of the employee)**
h. **Edit employee information (Name, and income only)**
i. **Exit**

Data for an employee includes full name, filing status (J or j for joint and S or s for single), and taxable income on one line. The program must verify salary (positive numbers only) and status (can only be joint or single), if invalid data is entered print an error message and continue to the next employee. Use the table below to find tax rate:

SINGLE TAXPAYERS

If The Taxable Income Is ...		Computed Tax Is ...			
Over	But Not Over				Of Amount Over
$0	$1710	No Tax			
$1710	$20930	$87.00	plus	3.0%	$1710
$20930	$28790	$742.40	plus	8.0%	$20930
$28790	And over	$1449.60	plus	11.0%	$28790

JOINT TAXPAYERS

If The Taxable Income Is ...		Computed Tax Is ...			
Over	But Not Over				Of Amount Over
$0	$3420	No Tax			
$3420	$47120	$330.00	plus	4.0%	$3420
$47120	$57580	$1905.40	plus	9.0%	$47120
$57580	And over	$2899.20	plus	11.0%	$57580

Requirements:

- Develop a dictionary to represent an employee: (the following data members must be included, more is OK) :**Name (First, Last) , Income, Status, Tax**
- Program must be modular (all tasks must be done in functions)
- Must include functions to process a list of dictionaries
- Complete documentation (algorithms for functions and main)
- Prompt user for all input and output file names
- At start of program execution; prompt user for an input file name, start the program with loading the data into the program and then show the menu and let the user continue.
- Global variables are not allowed.
- Your program should calculate the tax based on the tables below.
- Use data file Final.txt to test your program. It is located on BB.

Input data file organization:

First Last Status Income (Values are separated by a space, you may assume there are no middle names)

Sample input file: ***(Assume all names in the list are unique and must stay unique.)***

```
Joseph Kardian j 539590.00
Bill Jones X 8976.0
Nancy Brown  j -9087.0
Marty Klauss  S 3390.58
```

Sample output file format: (Final report to a file)

```
Name                Status        Gross Salary        Taxes         Net Salary
============================================================================
Joseph Kardian      Joint         $539590.00          $55920.30     $483669.70
Bill Jones          X             is invalid input
Nancy Brown         Joint         Negative salary is invalid
Marty Klauss        Single        $3390.58             $0.00         $3390.58
-----------------------------------------------------------------------------
Averages                          $271490.29           $27960.15     $243530.14
```

Student list print format to the monitor:

```
Name                Status        Gross Salary        Taxes         Net Salary
============================================================================
Kardian, Joseph     Joint         $539590.00          $55920.30     $483669.70
Jones, Bill         X             is invalid input
Brown, Nancy        Joint         Negative salary is invalid
Klauss, Marty       Single        $3390.58             $0.00         $3390.58
```

Extra Credit:

1) Make the search not case sensitive and/or partial name search. (10 Pts.)

2) Updates the input file to include all the changes before stopping the program. (10 Pts.)

3) Add any features that may improve the program functionality. (Email me first to make sure it is worth extra credit)