CSC241: ASSIGNMENT 6

Implement the functions below in the file assignment6.py which can be found on the D2L site in the dropbox for the midterm. You should save the template file I provided and then modify that file by adding the bodies for the functions. When you do, make sure to remove the placeholder pass statements that are currently there. The bottom of the file contains automatic checks of your results. **YOU CAN USE ONLY A SINGLE RETURN STATEMENT IN EACH FUNCTION AND IT MUST BE AT THE END OF THE FUNCTION.**

1. Write a program, **showNames(ifile)** which writes the name of each person in the file. Each line contains a name followed by an id followed by a grade. Using a "collection" for loop on the file, write code which returns a sorted list of the names in the file. Include in the code a "try/except" combination which will catch the file not found error and return a list with a single entry of -1.

```
>>> showNames("nosuchfile.txt")
[-1]
>>> showNames("grades.txt")
['Domel', 'Fischer', 'Jones', 'Patel']
>>> showNames("grades1.txt")
['Domel', 'Fischer', 'Hope', 'Patel']
```

2. Write a program, **calcAvg(ifile)**, which will calculate the average score for the first assessment on each line of the file. Each file contains a name followed by an id followed by a series of grades. This program will calculate the average of the first grade in the series. Include in the code, try/except code to catch non-numeric grades. Non-numerics will be by-passed in the average calculation. The code will also use try/except to catch the file not found error. The program will return a string as shown below.

```
>>> calcAvg('nosuchfile.txt')
'File not found.'
>>> calcAvg('grades.txt')
'Total number of students: 4  Average score: 97'
>>> calcAvg('grades1.txt')
'Non-numeric found. Total number of students: 3  Average score: 96'
>>> calcAvg('grades2.txt')
'Non-numeric found. Total number of students: 1  Average score: 90'
```

3. Write a program, **studentAvg(ifile)**, which will calculate the average score for each student. Each file contains a name followed by an id followed by a series of eight grades. This program will calculate the average score for each student. Include in the code, try/except code to catch non-numeric grades. Non-numerics will be by-passed in the average calculation. The code will also use try/except to catch the file not found

error. In addition, the code will use a try/except to check for an empty file. The code for this check is in the template. Place it in the appropriate try/except position.

```
>>> studentAvg('emptyfile.txt')
'File is empty.'
>>> studentAvg('nosuchfile.txt')
'File not found.'
>>> studentAvg('grades2.txt')
['Error! Non-numeric! Name: Domel Number of assignments: 7 Average score: 0.0',
'Name: Fischer Number of assignments: 8 Average score: 90.0']
>>> studentAvg('grades1.txt')
['Error! Non-numeric! Name: Domel Number of assignments: 7 Average score: 81.428
57142857143', 'Name: Fischer Number of assignments: 8 Average score: 74.125', 'N
ame: Hope Number of assignments: 8 Average score: 100.0', 'Name: Patel Number of
 assignments: 8 Average score: 90.375']
```

Submitting the assignment

You must submit the file holding all of the function definitions using the assignment 6 dropbox on the D2L site. Submit only a single Python file named as instructed in the template with all of your function definitions inside of it.

Grading

The assignment is worth 40 points. Please see the rubric for grading standards.