Lab Objectives: 2 D Lists, Classes

Notes:

1. Upload your solutions as **a single .zip file** to the Lab06 assignment for your section on Moodle. You must use the following naming convention: Lab06_Surname_FirstName.zip where Surname is your family name and FirstName is your first name.
2. You should only use functionality covered in CS115 in your solution.
3. Include a docstring for your functions.

1. a. Write a function `formEqualLength()` that takes a two-dimensional list of words (words) and an integer (n) as parameters. The function will check all words column-wise, and form a sentence from the words with the length n by putting a space between the words. The function should return the sentence formed.

   Note: your function should work for a 2D array of any size.

   b. Write a script to test the function defined in part a.

   > **Sample Run:** (n is 6)
   >
   > ```
   > Two Dimensional List:
   >
   > ['This', 'is', 'lab', 'Script']
   >
   > ['We', 'should', 'finish', 'it']
   >
   > ['we', 'solve', 'some', 'questions']
   >
   > Sentence: should finish Script
   > ```

2. Write a class, Personnel (**Personnel.py**) that represents a typical **Personnel** object.

   Personnel objects have the following attributes:

   - Id
   - Name and surname
   - Department
   - Status (M – Managerial, A – Academic, B- Both)
   - Salary

   Note: all data attributes should be private (__).

   a. Your class should have an **init()** method that takes the values of all five attributes as parameters.

b. Your class should define the following methods:
- `get_id:`   returns the id
- `get_name:`   returns the name
- `get_department:`   returns the department
- `get_status:`   returns the status
- `get_salary:`   returns the salary

c. Write a method `increase_salary()` which *updates* the salary of a personnel object according to the following:

Managerial: 12% increase
Academic: 15 % increase
Both: 18% increase

d. Your class should define the **__str__** and **__repr__** methods according to the output shown in the sample run.

e. Create a Python script that does the following:
- c. Implement the `read_file()` function which receives the file name and returns a list which contains all personnel objects (First examine the data file format)
- d. Read the contents of the file `'personnel.txt'` into a list `p_list` using the `read_file()` function.
- e. Update the salary of all personnel objects in the list.
- f. Display the list.
- g. Put the personnel objects whose status is 'B' into a dictionary d where the *keys* of the dictionary are the ids and the *values* are personnel objects.
- h. Display the objects in the dictionary d (see sample run)

Sample Run:

```
All personnel:
[Id:7802
Name:Ahmet Saygin
Department: CS
Status:A
Salary: 8050.0 TL
, Id:1356
Name:Mert Kargi
Department: Man
Status:M
Salary: 3808.0 TL
, Id:8932
Name:Tuba Ustun
Department: EE
Status:B
Salary: 11800.0 TL
, Id:1342
Name:Cagla Bakir
Department: COMD
Status:B
Salary: 11564.0 TL
, Id:7545
Name:Betul Turan
Department: IE
Status:M
Salary: 5600.0 TL
, Id:4320
Name:Ali Yazi
Department: ECON
Status:A
Salary: 7360.0 TL
, Id:1987
Name:Ece Onur
Department: PHYS
Status:B
Salary: 14160.0 TL
]
Personnel With Both Managerial and Academic Responsibilities:
Id:8932
Department: EE
Salary: 11800.0 TL

Id:1342
Department: COMD
Salary: 11564.0 TL

Id:1987
Department: PHYS
Salary: 14160.0 TL
```