Instructor: Dr. Rabiei

1. Write a function which gets the number of Fibonacci Sequence terms and returns the desirable Fibonacci Sequence.

input: 5 (int)

output: [1,1,2,3,5] (list)

2. Write a function which gets 'n' and returns an $(n \times n)$ Khaiam-Pascal Matrix.

input: 5 (int)

output: $\begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 \\ 1 & 2 & 1 & 0 & 0 \\ 1 & 3 & 3 & 1 & 0 \\ 1 & 4 & 6 & 4 & 1 \end{bmatrix}$ (Numpy array)

3. Write a function which finds and replaces one word with another in any text file. The input will be the file name, first word, second word and the function should save new text file.

input:

file name (string) , first word (string) , second word (string)

output:

new.txt file with the replaced words (string)

4- *"data.txt"* contains 6 parameters of some given persons, write a function which reads each line of *"data.txt"*, splits them, capitalizes the names and then categorizes them in a dictionary (like below) and returns it. Then stores all dictionaries in a list.

Dict={'first name':(string) , 'last name':(string) ,'age':(int) , 'height':(int) , 'weight':(int), 'nationality':(string)}

*Note: the input of the function is the file name.

5- Write a program that computes a user's GPA on a 4-point scale. This program reads *"Transcripts.csv"* and according to the following Table calculate the Cumulative GPA(out of 4). This program should also insert a new column called 'Mark_4' to the *"Transcripts.csv"* which contains each course mark from 4 and then save the updated file.

Mark/20	Mark/4
[16,20]	4
[14,16)	3
[12,14)	2
[10,11)	1
[0,10)	0

NOTES:

1- Your .ipynb file should include 4 cells, so Answer each question in a particular jupyter notebook cell of your main notebook.

2-Put your main notebook in a single "ZIP" file and name it as below:

    CA#0_[full name]_[student number]

3- Contact (ah.nazeri1@gmail.com) if you have any problems related to this assignment

"Good Luck"