جامعة بيرزيت
BIRZEIT UNIVERSITY

COMP242 – Project# 1

In this project, you will implement a single linked list structure that represents a list of Tawjihi records and do different operations on the records within that linked list. The inputs for the project will be the two Tawjihi files (One file for West Bank and the other for Gaza records). Each line in those files contains the Tawjihi record of a student (seat number, average, and branch). You may use the code you wrote/implemented during the lab to create and store Tawjihi record data into your single Linked List(s). You are free to use as many linked lists as needed.

YOU MAY NOT USE ARRAYS OR ARRAYLIST IN THIS PROJECT.

For good user experience, you will need to implement a graphical user interface (GUI) using JAVAFX.

YOU MAY NOT USE SCENE BUILDER IN THIS PROJECT

In the GUI there should be a way to select between ***WestBank*** or ***Gaza*** as well as an option to select between branchs "***Literary*** or ***Science***". According to the previouse selction the following functions will operate in the specfic selected data above:

1. An option to insert new Tawjihi record into the List **sorted**. (You chose the best way to insert the data so it easy to proceed with other requirements down)
2. An option to delete a Tawjihi record from the List using the seat number.
3. An option to search for a specific Tawjihi record using a seat number.
4. An option to display the top 10 students according to the grade (you may need to consider the repetitive grades العلامات المكررة)
5. An option to calculate and display the mean (average)[1]

[1] https://www.mathsisfun.com/mean.html

6. An option to calculate and display the mode (the most common number in a data set)[2]
7. An option to calculate and display the variance and standard deviation.[3]
8. An option to calculate and display the median (the middle of the set of numbers)[4]
9. An option to return the number and percentage of students whom grade above or equal a specific grade.
10. An option to export the above-calculated items (from 4 to 9) into a file as a report.

Good Luck!

[2] https://www.mathsisfun.com/mode.html
[3] https://www.mathsisfun.com/data/standard-deviation.html
[4] https://www.mathsisfun.com/median.html