Prepared by:

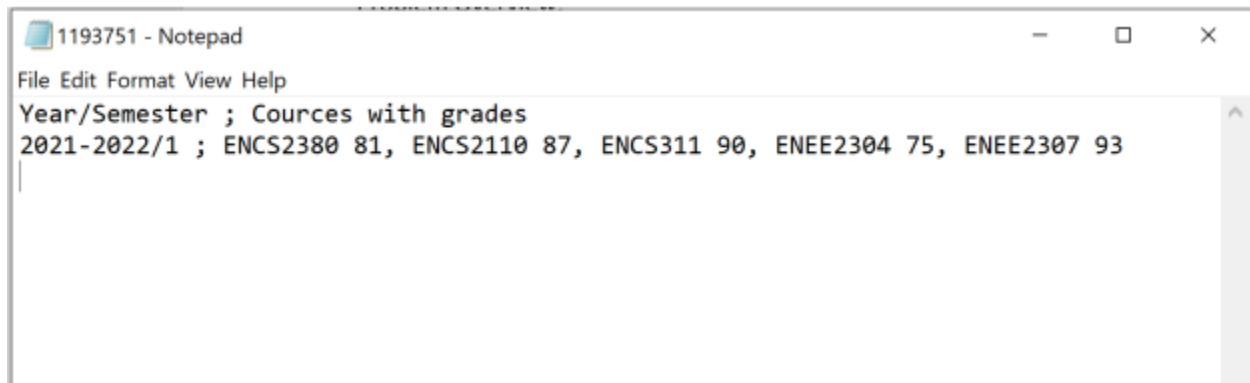Jihan Alshafi   1181641

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Instructor: Dr. Khader Mohammad

Section: 2

Date :5-1-2022

Used data structures with clarifications & screen shots of each task with testing examples :
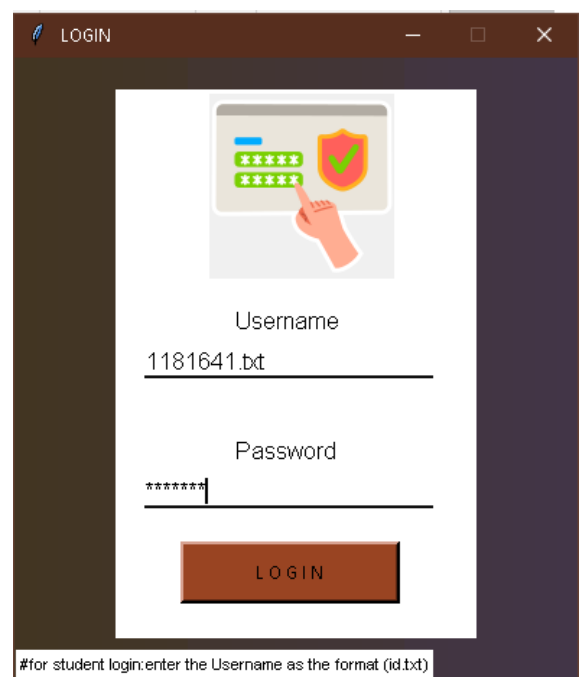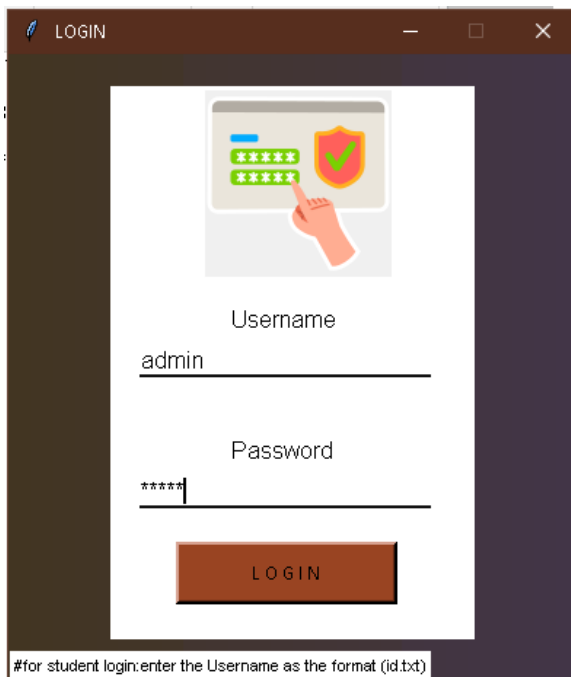
The program let the user (admin or student) to enter based on LOGIN screen , the system will provide Admin an operations related to students record system like add a new student record, update, search…. Each student record must be saved in text file , which will be in a specific format as the following :
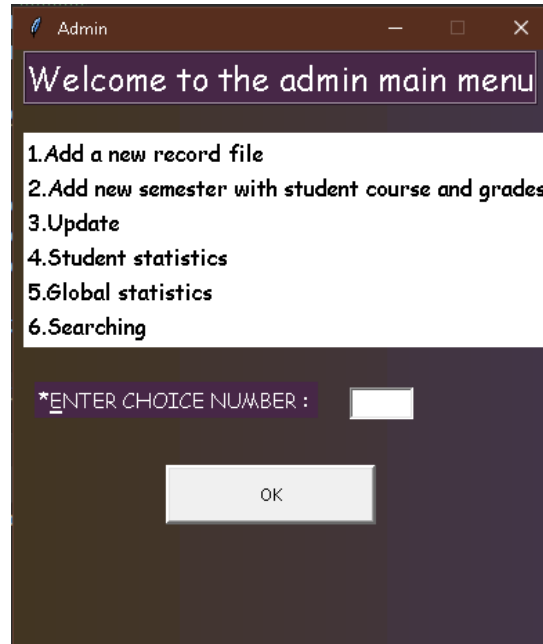

The login window :

This window let the admin enter if the **Username = admin** , and the **password = admin** , while the student has to enter his number with txt for example : the **Username = *******.txt** , and the **password = student** . look the fig. below:
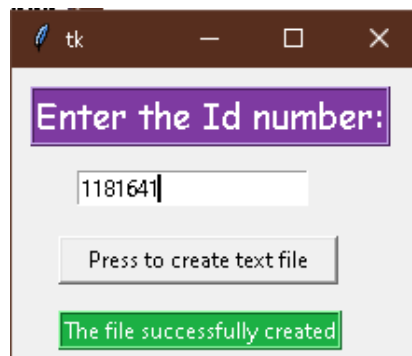
The ADMIN system:

After pressing login button for admin , the window below will be show , it has a menu consists of 6 options , and to choose any option could be by entering the option's number in the box then press OK button .

It should be alarming that the adding operation is only HAS to done using this window by entering number 1 , that it's not allowed to get a ready files and put them in the project folder , the program won't deal with them in this adding way.
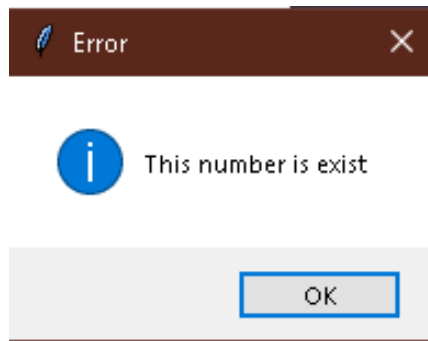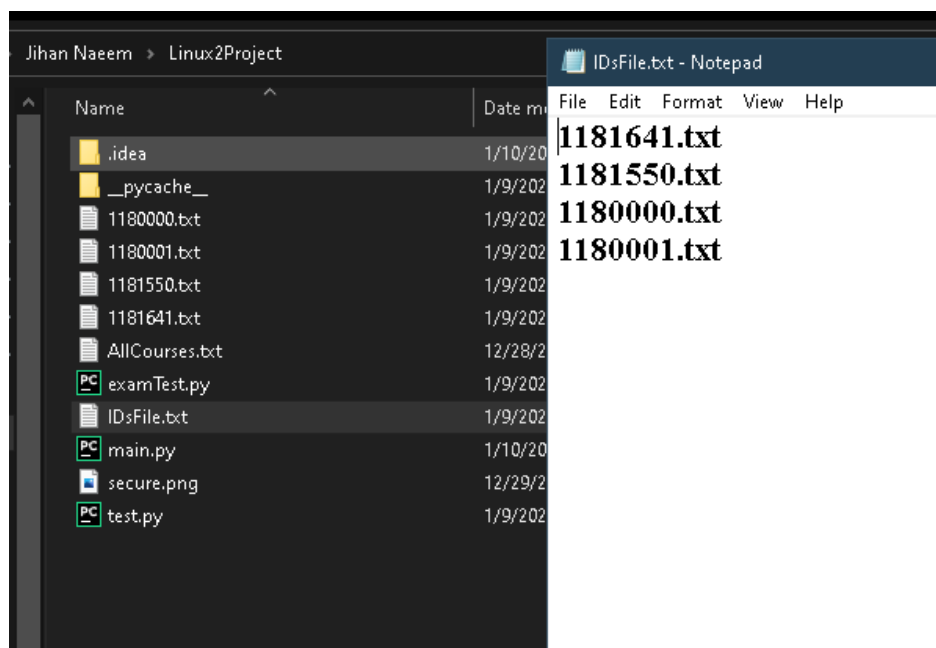

Options :

Option #1 : when entering number 1 in the box above , the window below will be shown , you have to enter the id number only of student you want to create his file as the format (id) and then click (press to create file) button .

Note that the program will raise an error if the ID is not unique, means that the file is exist for that number:

Also, at this point : the program will create a txt file in the project called "IDsFile" each file has been added from this window, the filename is added by the user will be add to the IDsFile , this is to save the filenames in the program when we make re-run.
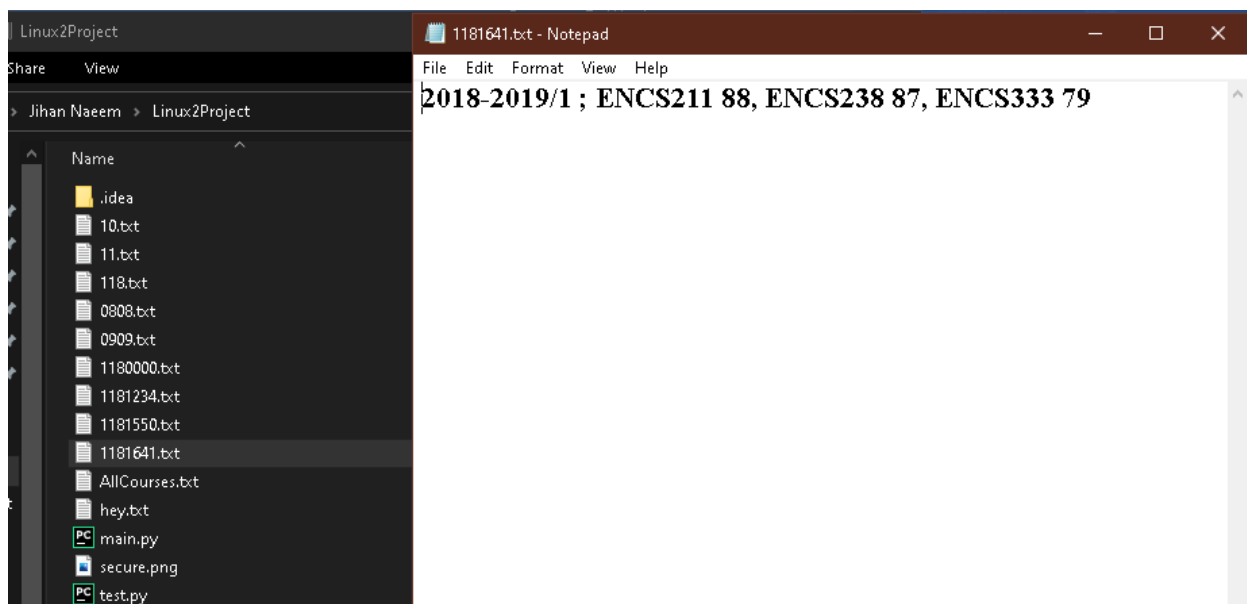

Option #2:

This option is available if the student file is exist , it will let you enter the file name as the format (id) and write the year as the format (2009-2010) ,and choose the semester number from the options box (1-3) , then add the courses concurrently with their grades as the format : (ENCS1234 80, ENCS5678 90)

note that the label fields that has a '' is mandatory , so the system will raise an error if there is missing information

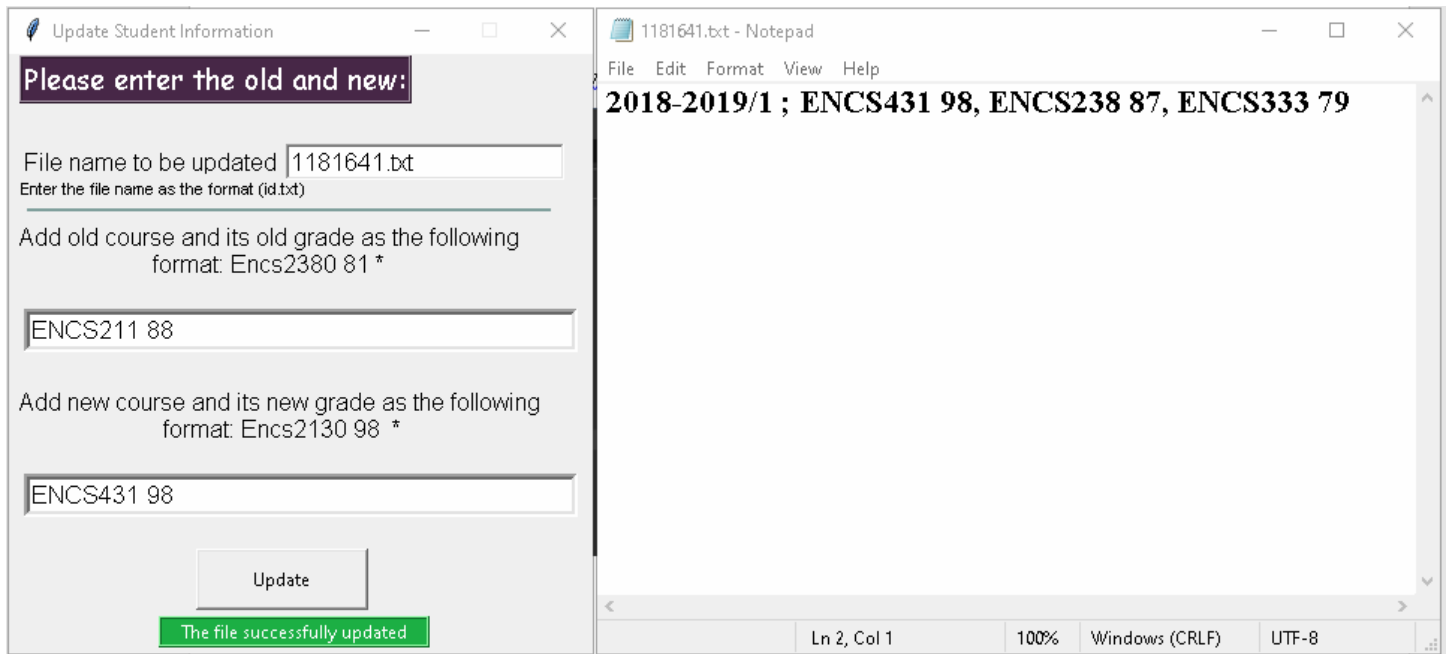Rest button will clear all the fields quickly , if you want to insert another data

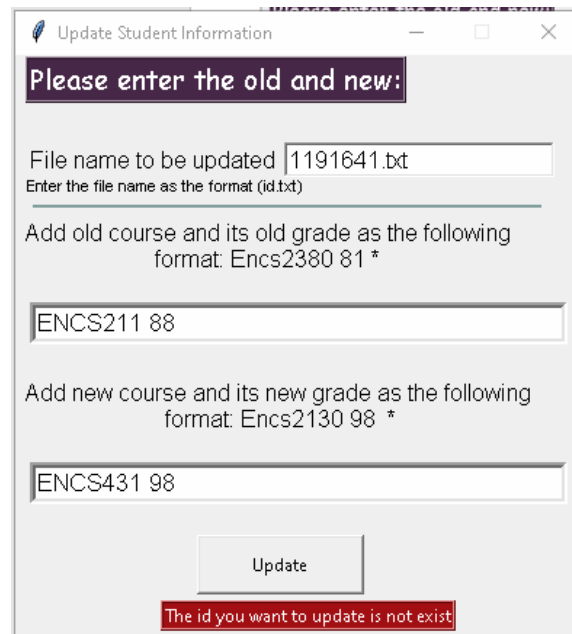The file is created and the data is written into successfully as the fig. below:

Option #3:

This option will let you update any course name and its grade in a simple way , you have to enter the file name you want to update its data as the format (id.txt) , - there is a label written below the box to help you when entering.

In The second field , you have to enter a one course with its grade and in the last box enter the new course name or the new grade for the course – keep the course name as It is if you want to change the grade only –

4

If the user enter a filename that isn't exist , the red message below will be shown :

If the user enter a course that isn't exist in the student file , the red message below will be shown :

Option #4:

After the user enter 4 number in the box menu, this window will be shown , the user has to enter the file name as the format (id.txt) of the file he want to show its AVG per semester with the overall AVG and the sum of all Taken hours .
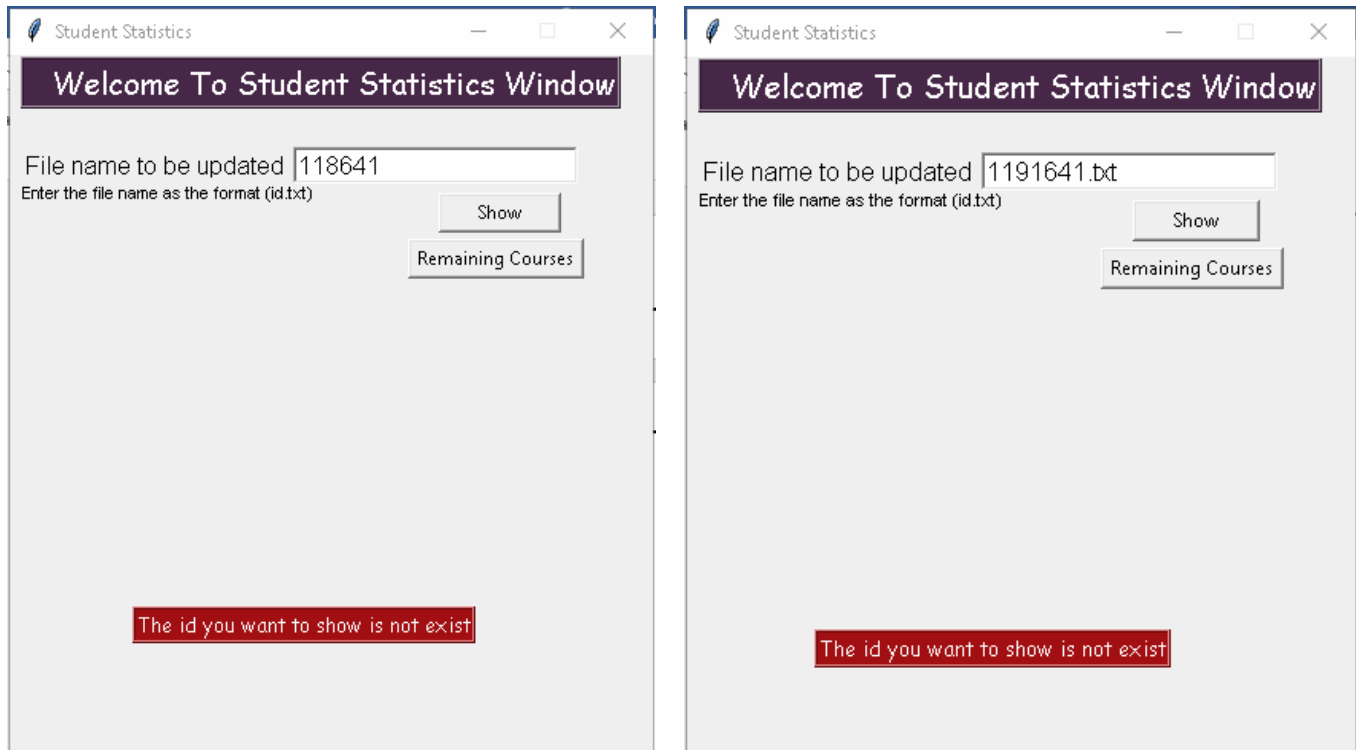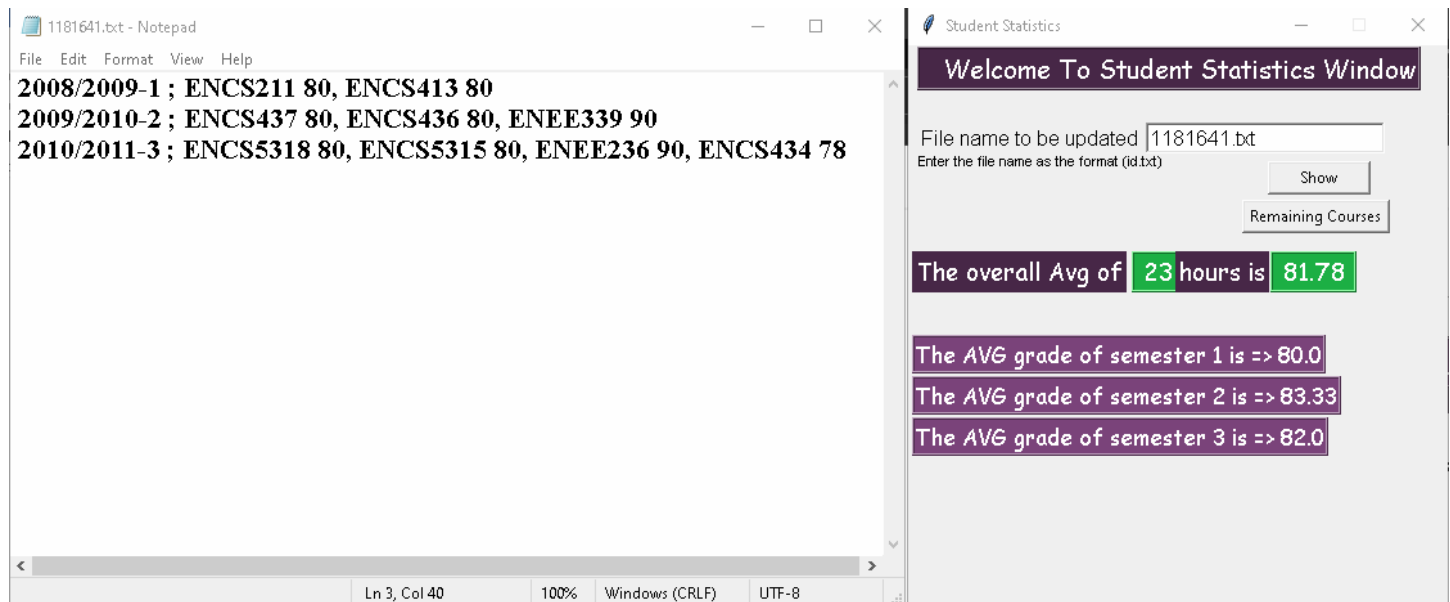
If the user enter the file name in a wrong format , or an id is not exist , the red message will be shown as the following fig. below :
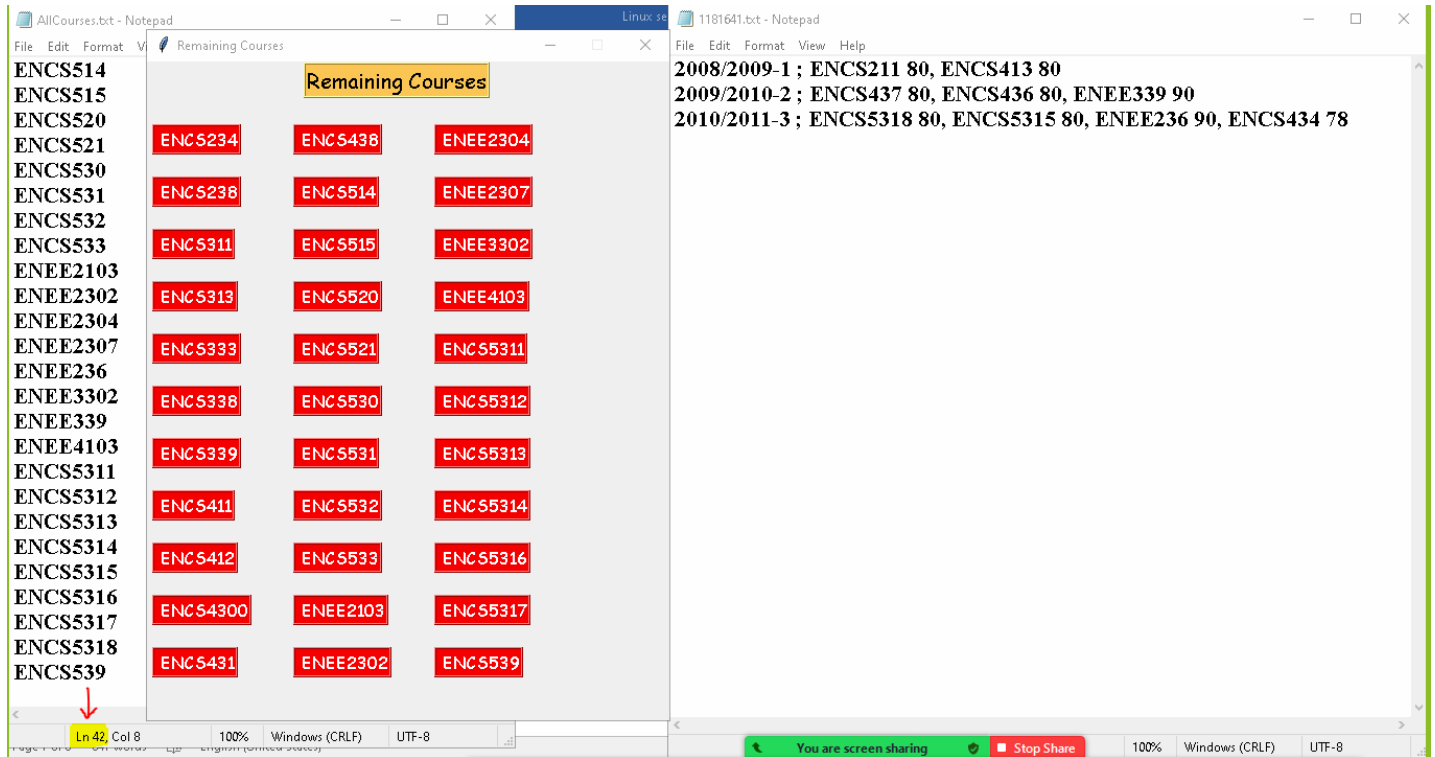

After entering the file name in a correct format , and click show button , the following data will be shown :

When admin click Remaining Courses button the following window will be shown :
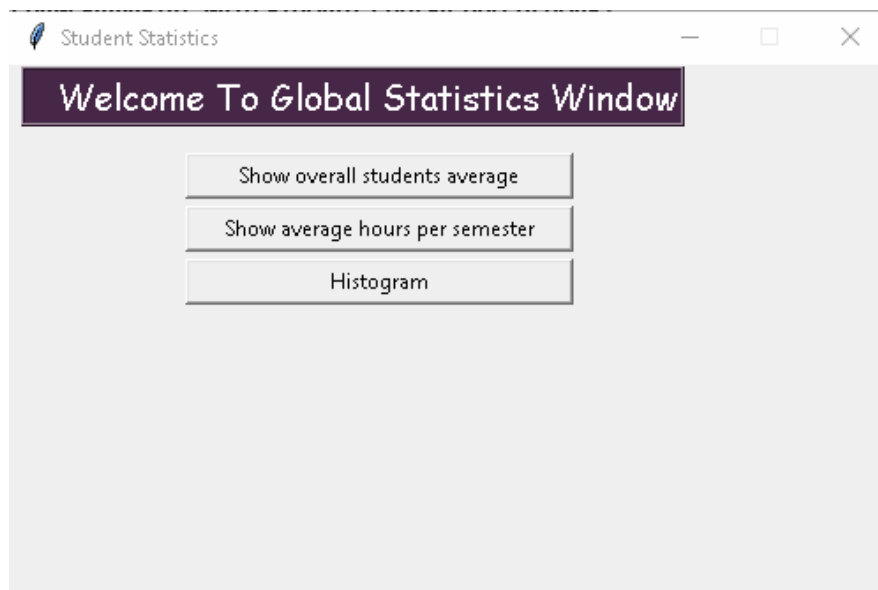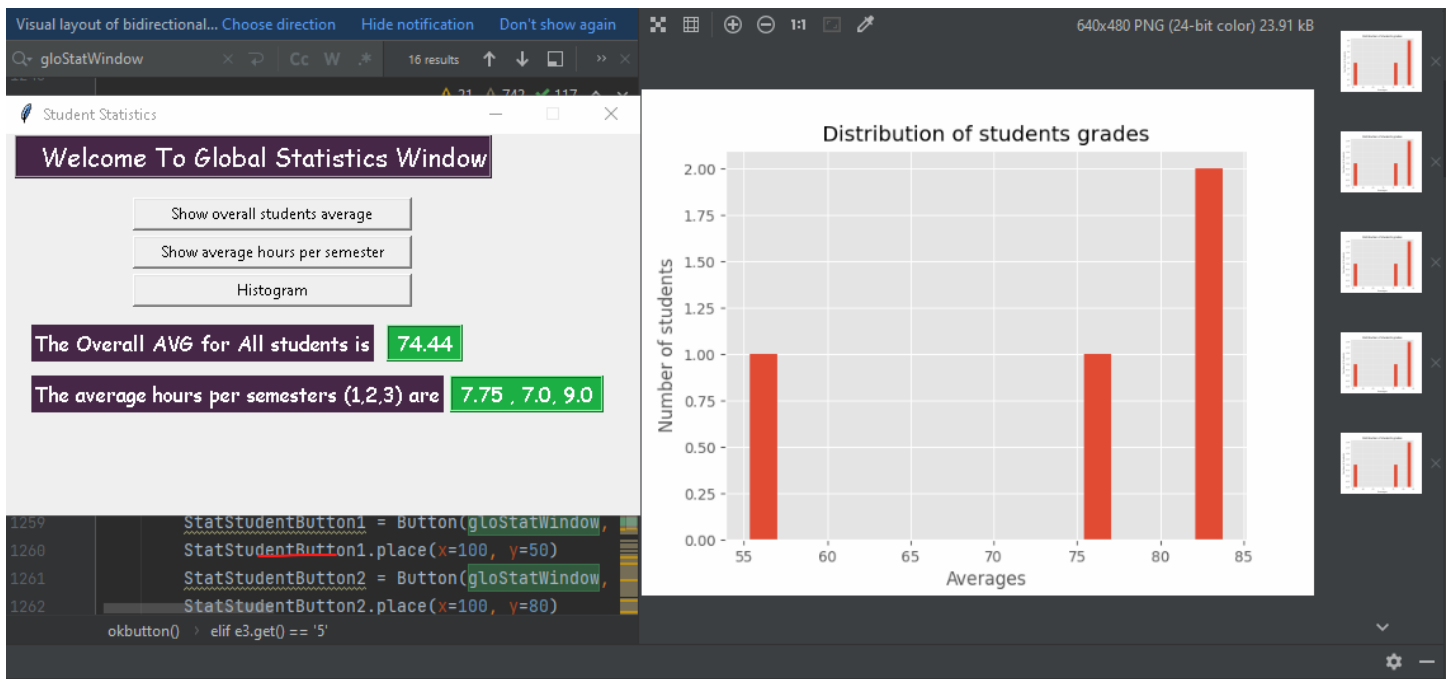
To show you that this is really the remaining courses , you can see above the file ALLCourses.txt , which it contains all ENCS and ENEE courses for computer engineering program, that all of them is 42 courses . Student file above show that he took 9 courses , and the remaining courses = 42 – 9 = 33 course which is shown in the Remaining window above .
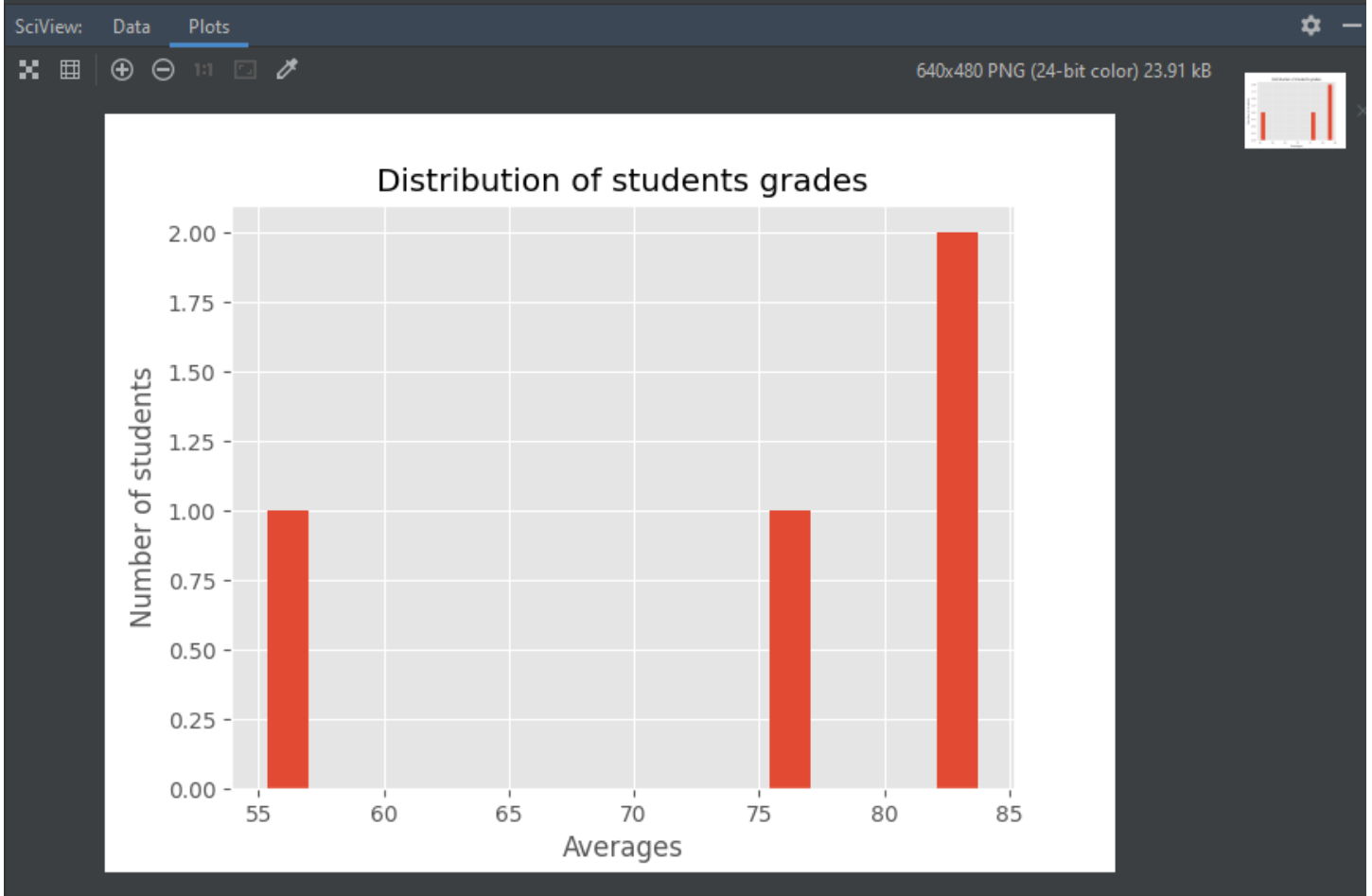
Option #5:
When admin enter number 5 in the login menu box , the following window will be shown .

When Show over all students average button is clicked , it will be calculated and shown , and when show average hours per semester button is clicked it will be calculated and shown as the following fig in the left side :
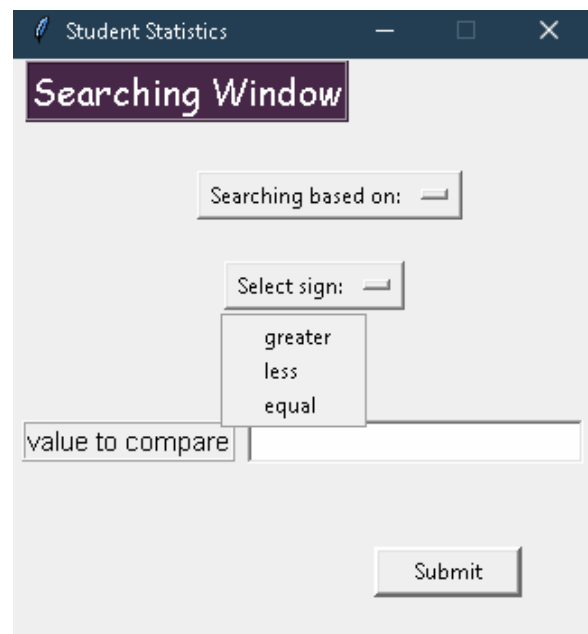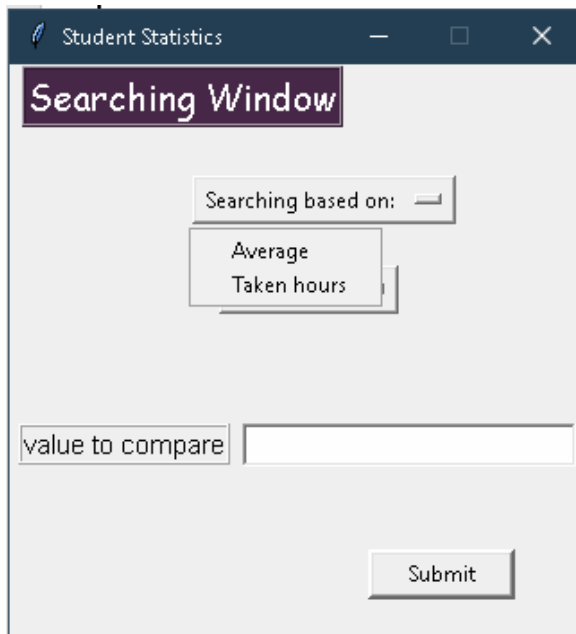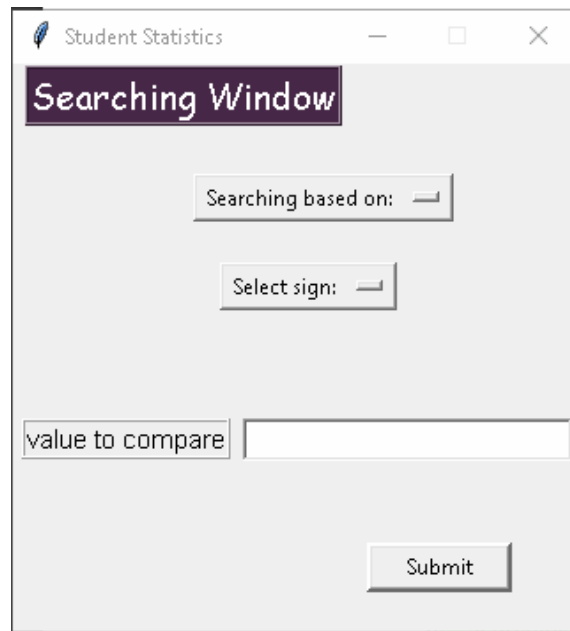

When the histogram button is clicked , the distribution of students and their grades will be show , where the x-axis represents the AVGS and the y-axis represents number of students . the histogram show the number of students for a specific range for example (you can know how many students was their AVG between (80-90):
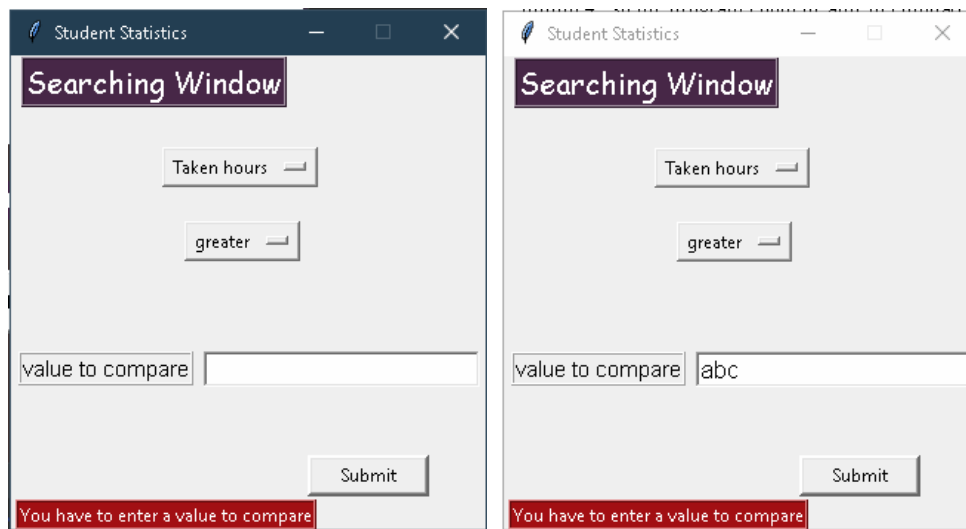
Option #6 :

When entering 6 in the login box , the window in the fig. below will be shown , the program will retrieve the ID of the students that satisfy the given criteria. The searching is based on average, taken hours. For example IDs that have an average grater/less/equal than 70 will be shown
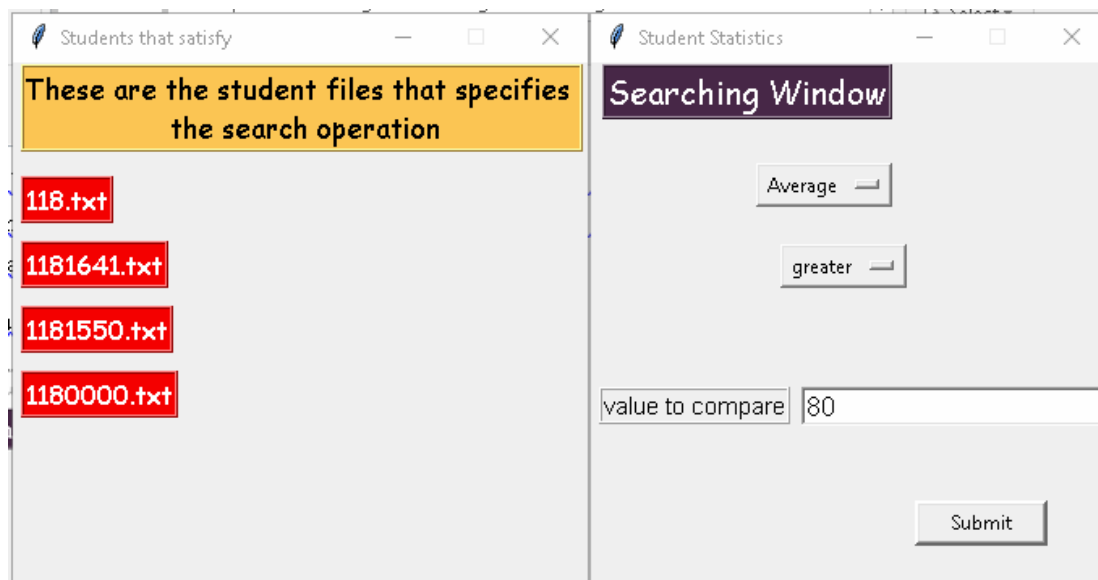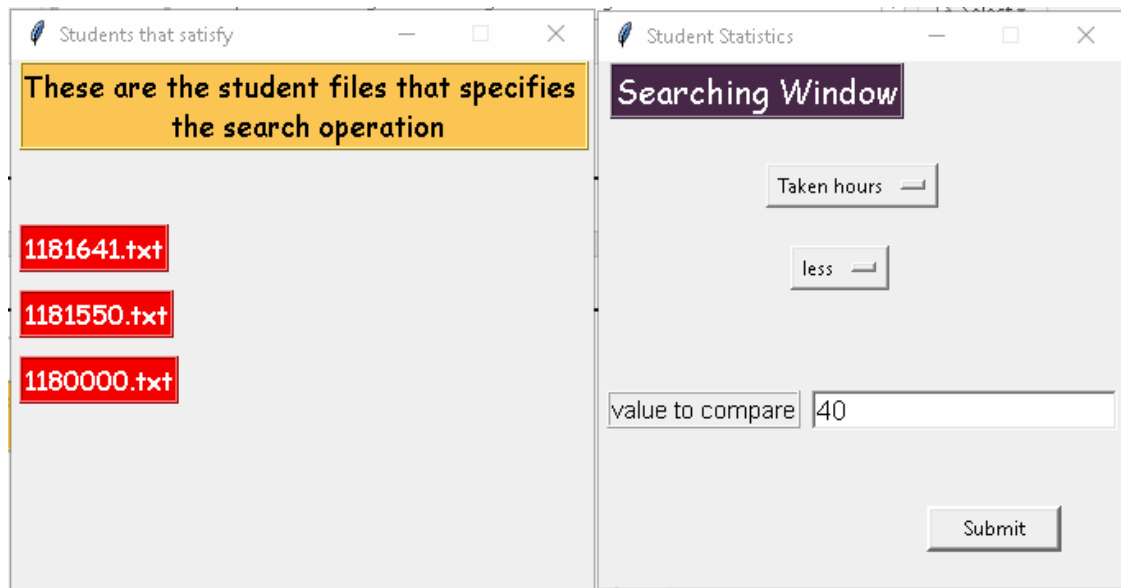
In the figs. Above, the admin must choose what the searching based on will be , from the options menu , then the sign from the second options menu , and the value to compare , BUT it should be known that the admin has to calculate the AVG from option 4 , so the program could be able to compare all stored averages with the entered value to compare.

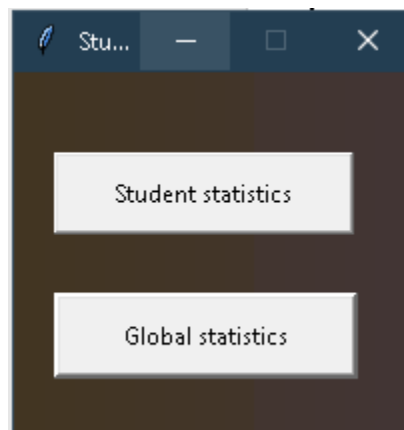If the user enter a character or left the box empty with no value , the red message will be shown

Next , we tried to enter a value to compare based on avarage and on taken hours as the belo figs.:
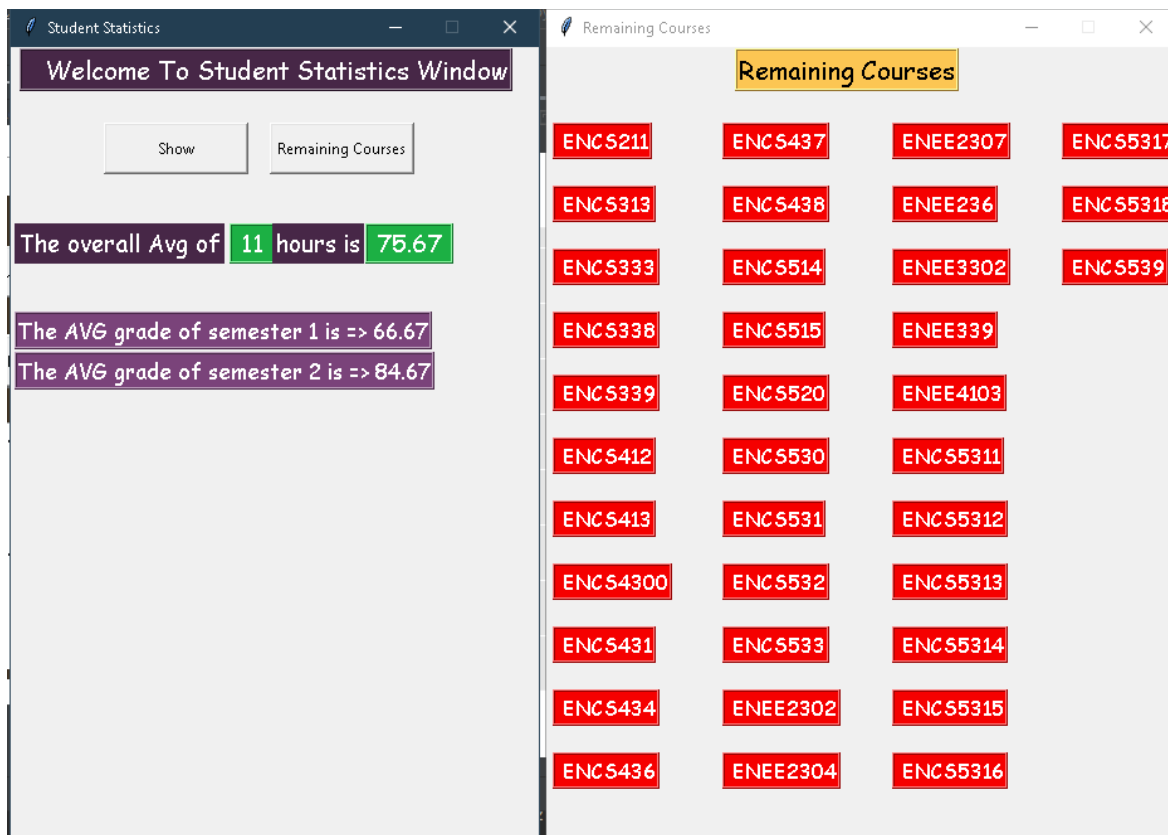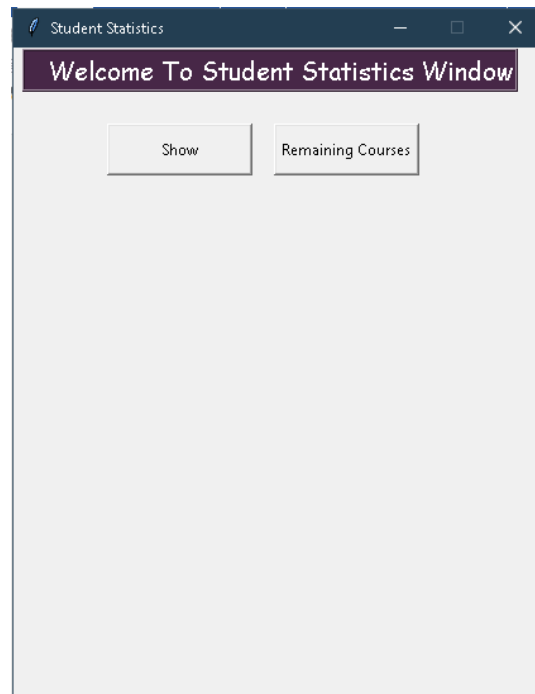
The Student system:

In the login window , after entering the **Username as the student id = *******.txt** , and the **password = student** . the window below will be shown :

The window is showing 2 buttons , the student button is show the following window when it's clicked , that is it's the same window which shown when the admin choose student statistics , but the admin has to enter the id of the student he want to show it's data , while here the data is belong to the student who logged in .

13

In the above fig. , the window in the left side will be shown after show button is clicked , and the window at the right side will be shown after the remaining coursed button will be clicked .

In the below fig. after Global statistic is clicked in the student interface , the window at the left side will be shown , the overall AVG for all student and the AVG of hours per each semester 1 , 2 and 3 will be shown as the left side of the following fig. and when Histogram button is clicked , the histogram distribution will be shown as the right side of the fig.