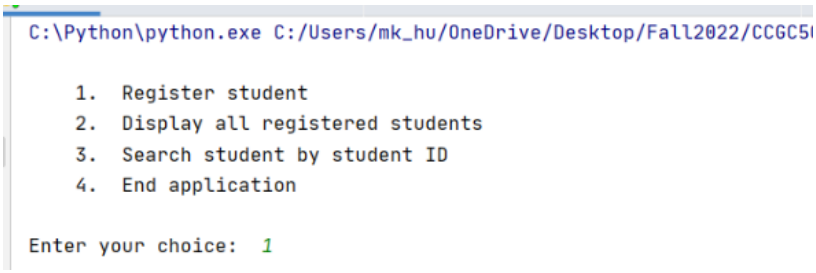
Objective:

- Python application using text files
- Append data to file, Search data from file, Conditional append data to file

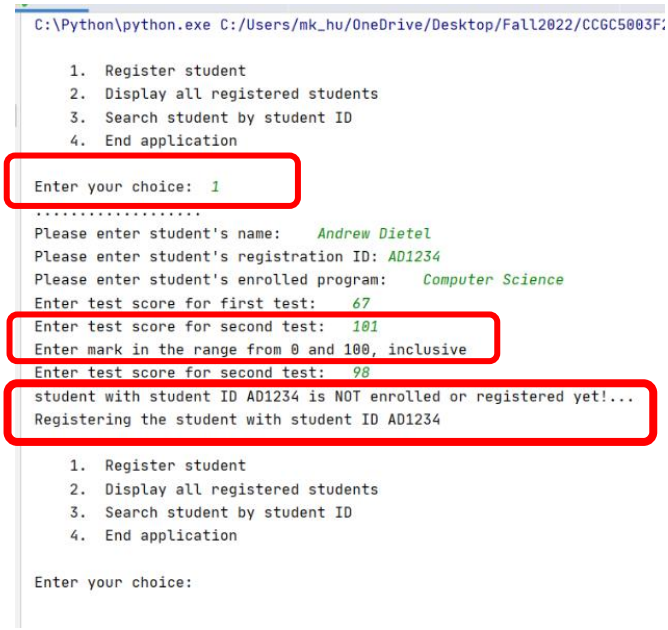
This application is student registration system. Student information consists of the following:

a) Student name
b) Student registration number (or Student ID)
c) Program student is enrolled in
d) Mark of test 1 (mark is integer value between 0 and 100 validated to be correct format)
e) Mark of test 2 (mark is integer value between 0 and 100 validated to be correct format)
f) Average of the two marks (which is real number – float value having 2-digits after the decimal point)

Application displays following options:



When user choses option 1 to register student, application asks for student name, student ID, program enrolled in, mark of test 1 and mark of test 2. Your application calculates average mark of the two tests (and keeps two-digits after the decimal point).



When user enters a mark that is not valid score, message to that effect is displayed, as shown. Then, with valid mark entered student information is sent for validation.

Application checks if storage text file is empty or if the student is not already enrolled (i.e., Student ID is not already in the text file). If student information is validated and student ID is unique, then student information is saved in the file.

If the student ID already exists in the system, the message to that effect is displayed and the student is NOT enrolled/registered in the system (or student information is NOT saved in the text file)

This scenario is shown below:

```
Lab5
Please enter student's enrolled program:    Computer Science
Enter test score for first test:    67
Enter test score for second test:    101
Enter mark in the range from 0 and 100, inclusive
Enter test score for second test:    98
student with student ID AD1234 is NOT enrolled or registered yet!...
Registering the student with student ID AD1234

    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application

Enter your choice:  1
...................
Please enter student's name:    Samuel Dietel
Please enter student's registration ID: AD1234
Please enter student's enrolled program:    Business Analyst
Enter test score for first test:    78
Enter test score for second test:    91
Student already registered ... cannot register again...

    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application
```

When user choses option 2 – list of all registered students is displayed, as shown below:

```
    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application

Enter your choice:  2
....................
                                                                                            Muhammad Khan
                                                                                    Student ID: N0123456

          Student Name            Student ID      Program Enrolled in     Test 1 Mark     Test 2 Mark     Average Mark

         Muhammad Khan                 N0123     Computer Programming             100              87            93.50
         Khan Muhammad                 N0321         Business Analyst              78              91            84.50
           Samuel Kahn                N09187  Application Development              89              28            58.50
         Wesley Thomas                 M1234              Mathematics              67              87            77.00
         Andrew Dietel                AD1234         Computer Science              67              98            82.50

    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application
```

When user choses option 3 – to search student by student ID, application asks for student ID. User enters student ID. If the student ID is found, then application displays student information including the heading and student data from the text file. This is shown below:

```
    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application

Enter your choice:  3
File exists
Please enter registered student ID to search student information:     N09187
Student is registered in the system
                                                                                          Muhammad Khan
                                                                                     Student ID: N0123456

            Student Name              Student ID      Program Enrolled in      Test 1 Mark     Test 2 Mark     Average Mark

             Samuel Kahn                  N09187    Application Development             89              28            58.50

    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application
```

When user choses option 3 to search student and the search fails, then the message to that effect is displayed. This is shown below:

```
                                                                                          Muhammad Khan
                                                                                     Student ID: N0123456

            Student Name              Student ID      Program Enrolled in      Test 1 Mark     Test 2 Mark     Average Mark

           Muhammad Khan                   N0123      Computer Programming            100              87            93.50
           Khan Muhammad                   N0321          Business Analyst             78              91            84.50
             Samuel Kahn                  N09187   Application Development             89              28            58.50
           Wesley Thomas                   M1234               Mathematics             67              87            77.00
           Andrew Dietel                  AD1234          Computer Science             67              98            82.50

    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application

Enter your choice:  3
File exists
Please enter registered student ID to search student information:    N0231
Student having student ID, N0231 is not enrolled in any program....

    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application

Enter your choice:
```

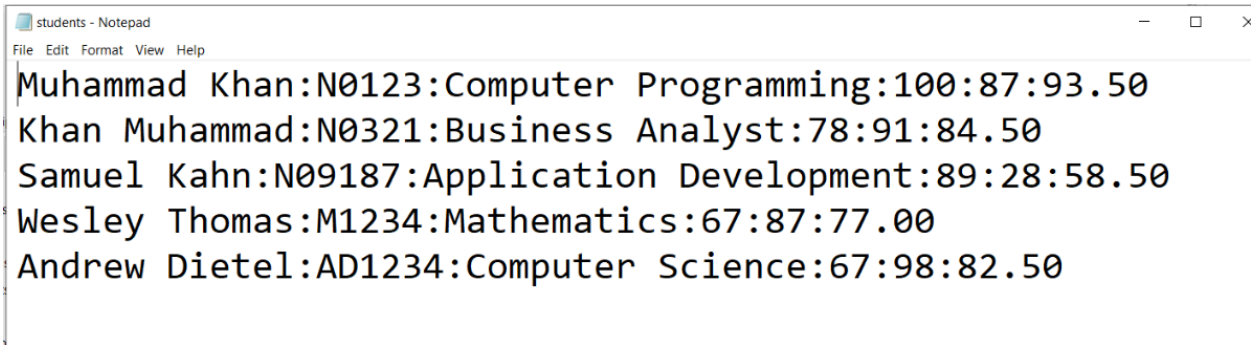
When user choses option 4, application ends, displaying the following message:

```
    1.  Register student
    2.  Display all registered students
    3.  Search student by student ID
    4.  End application

Enter your choice:  4
Application ending now...

Process finished with exit code 0
```

Information saved in the text file is given below:



Rubric for Lab5:

Checking conditions for appending data and information in file (e.g. no data in file or student ID exists)	**3 Marks**
Search function (testing for student ID and testing if it exists)	**3 Marks**
Display contents from file (both conditions, if file is empty or if there is some data in the file to display)	**2 Marks**
Overall application	**2 Marks**