DATA STRUCTURES and ALGORITHMS

HOMEWORK #3

Due Date 06-11-2022

You are given the students.txt file which includes ids, names, and two grades (Math and Data Structures respectively). Read the content from this file and construct a doubly linked list(use a generic DNode and DoublyLinkedList class) in reading order. I expect you to have a student class and keep the objects of that class in the doubly linked list. After constructing the list, have a menu to do the following using your linked list(the methods you write will be in the generic DoublyLinkedList class except the part where you read the text file and construct the initial list);

- Display the initial linked list content.
- Display the students sorted by their overall average. For this problem, use compareTo method of Student class you have written.
- Display the student names sorted by their data structure grades. (For this one and few other tasks, you might need type checking and casting. But, There are better solutions…)
- Find and display the math average.
- Find and display the student(s) who has the lowest Data Structures grade.
- Delete the student whose id is entered by the user.
- insert a new student to the list by getting the info from the user.
- Find and display the student count.
- Students pass the class if their grade is above the average for each course. Find and display the successful students for each course.

DO NOT USE ARRAY, ARRAYLIST, etc, IN YOUR SOLUTION.

Upload your homework on to the DYS system including codes and instructions on how your program works.