



# DHA SUFFA UNIVERSITY

Dept. of Computer Science

Spring 2020

Course Name: Data Structures and Algorithm (CS -2001)

## Assignment 2

Marks: 10

**Submission Guidelines:** You are supposed to submit the algorithm for the asked problem in proper algorithm convention along with the screenshots of outputs. Plagiarized assignments will result in 0 marks.

**Q.1)** Create a program to read a list of at least 20 students from a file and create a list. The program should use a double ended singly linked list and general doubly link list (not double ended) for implementation.

Each node in the linked list should have the student's name, a pointer to the next student, and a pointer to a linked list of scores (modify the pointers in link list according to its nature). There may be up to four scores for each student. The structure is shown in Figure 1.

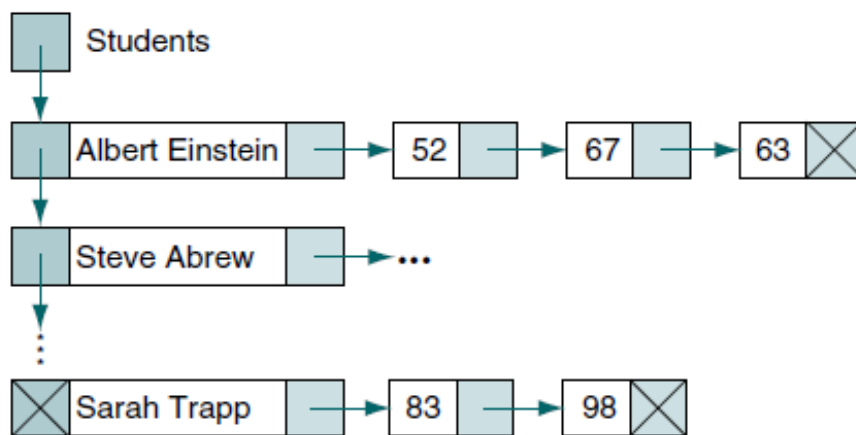


Figure 1. Student Scores Data

The program should initialize the student list by reading the students' names from the text file and creating null score lists. It should then loop through the list, prompting the user to enter the scores for each student. The scores' prompt should include the name of the student.

After all scores have been entered, the program should print the scores for each student along with the score total and the average score. The average should include only those scores present.

Student name	Score 1	Score 2	Score 3	Score 4
Albert Einstein	52	67	63	
Steve Abrew	90	86	90	93
David Nagasake	100	85	93	89
Mike Black	81	87	81	85

Figure 2. Sample Data