Dt: 27th April 2021

Assignments (Lab 3)

NB: This paragraph is common for all the questions. The programs should work for any value of N (as high it may be). What is the complexity of the algorithms? Please state the reason with a proper explanation [Wite on a white paper and submit the scan copy with the assignment PDF file]. Each program should be run for at least TWO test cases. If you are assigning any memory through malloc() function, remember to free() up that memory at the end of the program.

1. Create a Linked List of size N, where each node will have a random character and pointer to the next node. N should be given as user input. WAP to remove the duplicate characters from the list.

2. Create a Linked List of N Fibonacci numbers. N should be given as user input. WAP to find the summation of odd and even Fibonacci numbers in the series. The program should be run in one pass (only one for/while loop in the entire program).

3. Create a Linked List of N students. Each student node will have roll_no, percentage of marks, and the corresponding grade. The roll_no will vary from 1 to N. Percentage of marks will be taken as a random input. The grading system is as given below.

Percentage	>=90	>=80, <90	>=70, <80	>=60, <70	>=50, <60	>=35, <50	<35
Grade	A	B	C	D	E	P	F

WAP to create the group-wise **separate Linked lists** based on the grades.