Graded Assignment 1 – Data Structures

For this assignment, you will solve problems based on the concepts of Linked Lists.

Instructions

- **Your C program should carry comment statements at the top indicating your name and a statement confirming that the program is completely your own work and that no part of it has been copied from anybody else or downloaded from the net.**

- **Assignment submitted after due date will not be evaluated and a score of zero will be awarded for this assignment.**

- **You have to submit .c file via BB.**

Due Date: Midnight, March 17, 2025.

Submitting this Assignment

- You will submit (upload) this assignment in Blackboard. Email submissions will not be accepted at any cost.
- Name the file as "GA1_2025_John_Doe.c" in case your name is "John Doe".

Grading Criteria

This assignment has absolute 10 points. Viva will be conducted for suspected cases of plagiarism.

Question:

Using **singly linked list data structure**, design a tourist handling system for persons who want to make a trip to Bali, Indonesia. Each node of list (named BOOKING) should hold the name of the tourist (First_Name, Last_Name) and registration number based on order in which booking was done (for example 5 for booking done on March 5). Out of these, only first N persons would be accommodated on the actual TRIP list. The rest would be put on a WAITLIST. If any tourist wants to cancel his/her booking, the corresponding node will be deleted from all the lists. New names would be added from WAITLIST to TRIP list in case there is a vacancy and the corresponding node will be shifted from the WAITLIST. Bookings will be done only during March. It is guaranteed that only one person does booking on a particular day. Also it is guaranteed that all names will be unique and there will be no duplicates.

Use the following operation codes in your program:

   1: will be followed by name of the tourist, and date of booking. Include the tourist on BOOKING list

   2: will be followed by name of the tourist. Cancel the booking for the tourist

   3: Print BOOKING list

   4: Print TRIP list

   8: Print WAITLIST list

The data for the program would be read from file EASYTRIP.txt. The first line would contain N. The remaining lines will start with operation code and followed by relevant data wherever needed. For booking, it would be name of the tourist followed by day of booking in March. For cancelling, it would be just the name of the tourist. See the sample output file to see style of printing.

Sample Input File

```
5
1 vikas jain  3
1 ram gupta  6
1 alia sen 14
1 ivaan shukla 9
1 jyoti deka 11
3
1 mili patel 16
2 ram gupta
1 vidhu reddy 7
1 zoya ahsan 12
2 vikas jain
4
1 suraj lal  17
8
2 ivaan Shukla
2 alia sen
4
```

Sample Output

   BOOKING   3 vikas jain   6 ram gupta   9 ivaan Shukla 11 jyoti deka   14 alia sen

   TRIP 7 vidhu reddy 9 ivaan Shukla 11 jyoti deka   12 zoya ahsan 14 alia sen

   WAITLIST 16 mili patel 17 suraj lal

   TRIP 7 vidhu reddy 11 jyoti deka   12 zoya ahsan 16 mili patel 17 suraj lal