Assignment 7

1. It is the time after Diwali and hence students are coming back with a baggage full of sweets from their homes. If a student has *s* sweets, he/she first gives to the best friends in the order of friendship. If the student had more sweets than friends, he/she cannot give more than one sweet per friend or give sweets to non-friends, and therefore the sweets remain undistributed. Print the number of sweets obtained by all students roll number wise.

Input Format
The first line is *n*, the number of students. Thereafter there are *n* lines, 1 for each student. Each line prints the roll number, name (1 word) and number of sweets. Thereafter the next *n* lines print the friendship details. The first input is the roll number, number of friends, list of friends (roll number) in decreasing order of friendship.

Output Format
For every student (roll number wise), the total number of sweets received and the list of students from whom the sweets were received (roll number wise).

Sample Input
3
IIT1 A 5
IIT2 B 1
IIT3 C 2
IIT3 1 IIT2
IIT2 2 IIT1 IIT3
IIT1 1 IIT2

Sample Output
IIT1 1
IIT2
IIT2 2
IIT1
IIT3
IIT3 0

Explanation
3
IIT1 A gives sweets to IIT2 only (4 un-distributed)
IIT2 B gives sweets to IIT1 only
IIT3 C gives sweets to IIT2 only

2. Make a GUI utility for question 1 that takes the same input file as for above, and:

- Enables you to add more students who were not in the system
- Enables you to add more friends of students who may have missed roll numbers in the original data entry
- Enables you to delete students and friends of students similarly.
- Enables you to change the number of sweets
- Enables you to see the cumulative (roll number wise) list of students and total sweets received. Clicking on a student gives the list of students from whom sweets were received. Clicking any roll number on that list loads the list of sweets received from that student instead. Print screenshot.
- Entering of a wrong roll number in search prints an error on the GUI by exception handling. Print screenshot.
- Write the same input file in the same format as supplied after correcting the errors (strictly in the format <roll_no>_input<casenumber>.txt in the root directory of the submission).
- Write the output file in the same format as Q1 (strictly in the format <roll_no>_output<casenumber>.txt in the root directory of the submission).

Instructions:

- Case 1: Add a student IIT1 manually in sampleIn2.txt with 10 sweets and friends as 9h3ci, p2s86, o1kan, aj1aw. Export the output file as <roll_no>_output1.txt and input as <roll_no>_input1.txt. Add screenshot as <roll_no>_screen1.<ext>. Multiple screenshots may be added as screen1a, screen1b, screen 1c, etc.
- Case 2: Delete the student p2s86 completely from the system. Export the output file as <roll_no>_output2.txt and input as <roll_no>_input2.txt, Add screenshot as <roll_no>_screen2.<ext>.
- Case 3: Add the friend "wqt98" to "04gnw". Export the output file as <roll_no>_output3.txt and input as <roll_no>_input3.txt. Add screenshot as <roll_no>_screen3.<ext>.
- Case 4: Delete the friend "fbf41" to "8m0sk". Export the output file as <roll_no>_output4.txt and input as <roll_no>_input4.txt. Add screenshot as <roll_no>_screen4.<ext>.
- Case 5: Change number of sweets of aj1aw to 0. Export the output file as <roll_no>_output5.txt and input as <roll_no>_input5.txt. Add screenshot as <roll_no>_screen5.<ext>.
- Case 6: search for the roll number IIT5 (not present) and print error. Attach as <roll_no>_screen6.<ext>.

Notes for submission:

- Prepare everything as either ".tar.gz" or ".zip" only. We cannot take any other compression formats
- Before submitting ensure that the text files/screenshots are at depth 0 and not depth 1 (run "extract here" and you should see all your files right there are not just a folder with the same name as that of the submission).
- After compression, also ensure that you get a MD5 sum. This is not needed for this assignment but will be needed for the actual lab exam submission.