CS205
Algorithm Lab
Assignment-3
Lab Assignment: a

a. A Doctor is fond of his name; he gives preference to the patients who has name similar to his name. For calculating similarity he matches the alphabets with his name. To find out the similarity check all unique characters in doctor's name and also unique characters in patient's name and find how many characters match. For example - if a patient's name is Richa, and the doctors' name is Ahmed then the similarity will be 1 as only one character (a – ignore case) is common between the name of the doctor and patient. Tie is broken with the arrival time. In some Sunday morning there is a long queue of patients in his clinic. Doctor started his chamber at 8 o'clock and he collected all patient name and their arrival time and starts calling patient name as per priority discussed above. When he is done with one patient he rechecks the available patient at that instant and calls the next patient. Write an **efficient** program which will generate the name of the patient to be called next and supply it to doctor. Note that patient may arrive after 8 o'clock and in that case his/her name will be updated when he/she arrives. Read out the names of k (k is less than n when n is the total number of patients) patients and their arrival time from user who arrived before 8 o'clock at the beginning and also take input of doctor's name. As soon as doctor is done with one patient, before calling the next patient your program should ask user to input if there is any new patient and if yes then it asks how many new patients are there lets say m new patients are there then your program should read the name and arrival time of m new patients. It will continue till count reaches to n.

   Program Flow and input format:

   1. Total number of patient: n
   2. Read number of patient arrived till 8 o'clock: k
   3. Read name and arrival time of k patients.
   4. Call the next patient.
   5. Then after checking of each patient, your program will ask if there is any new patient – if user input 1 that means there are new patient, otherwise user should input 0.
   6. If input is 0 and all n patients are not checked then go to step 4.
   7. Else if user provided input 1 then
      a. program should ask number of new patients: m.
      b. Read name and arrival time of m patients
      c. Goto step 4.

   Output Format: Print order of patient in which they are checked along with their arrival time separated by newline. For example

   Alisa, 7.20 am
   Bikash, 7.15 am
   .
   .
   Zenith, 9.10 am

   Upload Ass3a.c