CIS 1.5 Fall 2009 Lab VI.3

In this lab, we will write a larger program that illustrates a more realistic use of `classes` than you have seen before. It will also serve to revise some ideas — like files — that we haven't seen too much of in the last while.

1. Write a program that defines a class `name` with the following data members:
   - A string called `first`.
   - A string called `last`.

   Not surprisingly, we'll use this class to hold people's names.

2. Add to your program a class `record` with the following data members:
   - An element of class `name` called `id`.
   - An integer called `age`.
   - An integer called `icd9`

   This class will be used to hold information about patients in a hospital. The variable `icd9` will hold a number (an ICD9 code) that identifies the patient's disease.

3. Create an array called `patients` which holds 10 instances of `record`.

4. Read the information in the files `names.txt`, `ages.txt` and `diseases.txt` (which you can get from Prof Parsons) into the array of records.
   You can assume that the first two names in `names.txt` belong to the same patient, that the age of the patient is the first value in `ages.txt`, that the relevant ICD9 code is the first one in `diseases.txt`, and so on.
   There is enough data in the files to complete the 10 records in `patients`

5. Write a function `printRecord` which takes an instance of `record` as its argument and prints out all the information in the record.
   Use this function to print out all the records in `patients`.
   Note that these are records from a dematology clinic — all the ICD9 codes (which are more or less real though the real codes have a bit more structure) are for skin diseases.

6. Find the oldest patient in `patients` and print out their name.

7. Find the youngest patient in `patients` and print out their ICD9 code.

8. Write a function `locateByDisease` which takes as an argument an ICD9 code (an integer) and an array of `records` and returns the first record of a patient that matches the ICD9 code.
   Use this function to locate the record of the patient who has impetigo (ICD9 code 6840) and then print their name and age.
   Note, the age and name should be printed from within `main`, not from within the function `locateByDisease`.