

HST 952 Homework 3

- Complete the class definitions for the Person, Patient, Physician, LabTable, and LabTest classes by using the class definition stubs provided. Note that the Patient and Physician classes should be sub-classes of the Person class. Write a program that iterates through the lab values described below, tests whether lab value results require an action to be performed by the primary care providers and alerts the primary care provider if they do by “sending” him/her a message (calling the sendMessage method). In addition, it sends another message to the appropriate patients so that they can call their primary care providers. Alerts must be sent in the following conditions:

Serum sodium	Value is greater than 140
Serum potassium	Value is greater than 5
Total cholesterol	Value is greater than 200
Serum HCG	Value is greater than 200000
Hemoglobin	Value is greater than 18 and less than 12
INR	Value is greater than 4.5 and less than 2.5
Blood urea nitrogen	Value is greater than 25 and less than 9

Store the information on the following patients:

- ID: 00-223-45
First name: Manuel
Last Name: Jones
Date of birth: 1/1/1938
Gender: Male
PCP: Corbin Dallas (see below)

Test name	Date performed	Result	Date Reported
Serum sodium	1/1/2002	137	1/2/2002
Serum potassium	1/1/2002	5.1	1/2/2002
Total cholesterol	1/1/2002	220	1/2/2002

- ID: 00-345-12
First name: Sumeeta
Last Name: Sidhu
Date of birth: 11/30/1965
Gender: Female
PCP: Corbin Dallas (see below)

Test name	Date performed	Result	Date Reported
Hemoglobin	1/1/2002	10.0	1/2/2002
Hemoglobin	6/12/2002	14.8	6/13/2002
INR	7/22/2002	3.6	7/22/2002

- ID: 00-679-56
First name: Angela
Last Name: Winterbottom
Date of birth: 11/30/1971
Gender: Female
PCP: Alicia Stone (see below)

Test name	Date performed	Result	Date Reported
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HCG	4/6/2002	254000	4/7/2002
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iv) ID: 00-543-27
 First name: Nita
 Last Name: Hassan
 Date of birth: 7/28/1969
 Gender: Female
 PCP: Craig Abbott (see below)

Test name	Date performed	Result	Date Reported
Blood Urea Nitrogen	5/5/2002	27	5/5/2002
Blood Urea Nitrogen	5/6/2002	29	5/6/2002
Blood Urea Nitrogen	5/7/2002	32	5/7/2002

Physicians

- i. First name: Craig
 Last Name: Abbott
 Date of birth: 6/9/1938
 Gender: Male
 Specialty: Nephrologist

- ii. First name: Alicia
 Last Name: Stone
 Date of birth: 8/4/1967
 Gender: Female
 Specialty: Obstetrician

- iii. First name: Corbin
 Last Name: Dallas
 Date of birth: 2/28/1945
 Gender: Male
 Specialty: Internist

2. Modify the program in number 1 so that the following conditions are satisfied:

- a) The program can be run on a daily basis and the physicians and patients are not sent the same alerts for a particular lab more than once. That is, if they have been sent a message for an abnormal lab result once, they should not be sent another message again. Feel free to add any additional attributes/methods to your classes.
- b) Make sure that all patients and physicians are not sent multiple messages in one day. Messages for all abnormal lab values for each patient that are reported within the same day should be sent in one combined message. Similarly, messages for all abnormal lab values for each patient that are reported within the same day should be sent to the physician in one combined message.