Input:

{monitor_period} /*this is the first line of the input.*/

//define the patient

patient {patient_name} {patient_period}

//define the devices attached to the patient (5 parameters in one line separated with space).

{device_category} {device_name} {factor_dataset_file} {safe_range_lower_bound} {safe_range_upper_bound}/*the {device_name} is attached to {patient_name}*/

…

factorDataset format:

value //A factor value that should be read by device

... // many many line

factorDatabase format:

/*

factorDatabase must be shown with following rules:

1. patient should be shown with the sequential order from input.
2. device should be shown with the sequential order from input.
*/

patient {patient_name}

{device_category} {device_name}

{[millisecond from the system starts to monitor]} {read_factor_value}

…

Output:

// If an input command is incorrect, ignore the command and output

Input Error

/*

If two alarm messages appear at a same time stamp, they should be displayed in the order of which patient and device are inputted first.

*/

//the following output is in one line separated with space

{[millisecond from the system starts to monitor]} {patient_name} is in danger! Cause: {device_name} {out_of_range_value} /*if read factors exceed the safe ranges */

//the following output is in one line separated with space

{[millisecond from the system starts to monitor]} {device_name} falls /*if factor read from device is -1 or end-of-file, it means device fails */

...

display factorDatabase /*You must show factorDatabase contents after the system finishes monitoring. The factorDatabase contents would display at the bottom of output.*/

Comment:

The first data read from factorDataset should have timestamp 0.

The unit of {monitor_period} is millisecond.

The unit of {patient_period} is millisecond.

Both {safe_range_lower_bound} and {safe_range_upper_bound} are inclusive.

device_category:

    PulseSensor

    BloodPressureSensor

    TemperatureSensor

You should read the input and factorDataset from file. And show output to standard output.

After you reach end-of-file in input file, system starts to monitor. While system starts to monitor, the timestamp is 0. System finishes monitoring when the timestamp reaches {monitor_period}. All devices attached to patients start to measure the patients' vital factors at timestamp 0.

You can use for-loop counter as millisecond timestamp.

There will be one value each line in the factorDataset file.

If you read -1 or end-of-file, it means device fails. If device falis, the value stored in database is -1.

A way to read input from System.in:

BufferedReader reader = new BufferedReader(new InputStreamReader(System.in));

String line = reader.readLine();

A way to read data from file:

File fakeDataFile = new File("name of the fake data");

BufferedReader reader = new BufferedReader(new FileReader(fakeDataFile));

String line = reader.readLine();

Write a main function in Class Quiz.

We'll compile your program with "*javac *.java*" under your source code directory.

*** Make sure you won't use package in your code, which is very likely to happen if you program with an IDE.

We'll test your program with "*java Quiz inputFile*"

e.g. *java Quiz sampleInput*

Please zip your source code, class diagram and upload it.

The file name should be [StudentID].zip. e.g. r09944048.zip

The folder structure should be:

  unzip r09944048.zip

=> [dir] r09944048

=>   r09944048/*.java

=>   r09944048/r09944048.pdf

BloodPressureData1.dataset Sample:
150
123
-1
200
-1
sampleInput:
3000
patient Mark 600
BloodPressureSensor sensor1 BloodPressureData1.dataset 150 200
patient Tony 500
BloodPressureSensor sensor2 BloodPressureData1.dataset 130 150
sampleOutput:
[500] Tony is in danger! Cause: sensor2 123.0
[600] Mark is in danger! Cause: sensor1 123.0
[1000] sensor2 falls
[1200] sensor1 falls
[1500] Tony is in danger! Cause: sensor2 200.0
[2000] sensor2 falls
[2400] sensor1 falls
[2500] sensor2 falls
[3000] sensor1 falls
[3000] sensor2 falls

patient Mark
BloodPressureSensor sensor1
[0] 150.0
[600] 123.0
[1200] -1.0
[1800] 200.0
[2400] -1.0
[3000] -1.0
patient Tony
BloodPressureSensor sensor2
[0] 150.0
[500] 123.0
[1000] -1.0
[1500] 200.0
[2000] -1.0
[2500] -1.0
[3000] -1.0