**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