In this week’s homework assignment you’ll be working with conditionals and private methods. Be sure to pull out any repeated code into a private method.

1 Fever Flow Chart

One of the earliest forms of artificial intelligence (AI) were expert systems. An expert system is a system designed to make decisions or arrive at diagnoses based on information it is given. The decisions it makes are based on a sequence of conditionals.

For this assignment, you will create an expert system to diagnose the cause of a fever. The flowchart shown on the next page is a simplification of the American Medical Association’s (AMA) diagram for diagnosing a fever. Using the flowchart, your program should ask the necessary questions to determine the cause of the fever as indicated by the chart.

Create a new BlueJ project entitled hw5. Inside the project, create a Java class called FeverDiagnosis that uses a Scanner to ask the user questions and diagnose the cause of the fever. You should pull out all repeated code into private methods to make your main() method as short and readable as possible.

2 Style Guide

Before you submit your assignment, double check the following:

• You have a Javadoc comment at the top of the class with a brief description (written in full English sentences), your name, and the date.

• All variable names are lower cased (remember, only classes are capitalized in Java)

• Use inline comments (//) to explain any complicated code

3 Submitting your homework assignment

You should submit your hw5 folder with your FeverDiagnosis class.

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Figure 5.11 Procedure to diagnose the cause of a fever.

Are you coughing? Yes → Are you short of breath or wheezing or coughing up phlegm? Yes → Possibilities include pneumonia or infection of airways

No → Do you have a headache? Yes → Are you experiencing any of the following: pain when bending your head forward, nausea or vomiting, bright light hurting your eyes, drowsiness or confusion?

Yes → Possibilities include meningitis.

No → Do you have a headache? Yes → Possibilities include viral infection

No → Do you have a headache? Yes → Possibilities include viral infection

No → Do you have a rash? Yes → Insufficient information to list possibilities.

No → Do you have a sore throat? Yes → Possibilities include a throat infection.

No → Do you have back pain just above the waist with chills and fever? Yes → Possibilities include kidney infection.

No → Do you have aching bones or aching joints? Yes → Possibilities include viral infection

No → Do you have pain urinating or are urinating more often? Yes → Possibilities include a urinary tract infection.

No → Have you spent the day in the sun or in hot conditions? Yes → Possibilities sunstroke or heat exhaustion.

No → Insufficient information to list possibilities.