FoST 2: Inheritance, Generics, JUnit, and Sets

Theoretical Questions :

1 The Java Virtual Machine is an abstract computing device that enables a computer to run a Java program compiled as a Java bytecode. Bytecode is a binary code that allows to group instructions executable by a java virtual machine and to processing faster than Java source code.

2 The Java Classpath is a parameter give in the Java Virtual Machine or the Java compiler that defines the path to the directory where Java classes and packages are located so that it runs them.

3 Without IDE, I compile a java program in the computer terminal with the line « javac programName.java ». Then, I can run the program with the line « java programName ».

4 A JAR file is a compressed file uses to share a java classes set.

5 To start a Java application we create a new class « ClassName.java » with a main() method.

6 Packages are like files to store classes. Load a package allows us to use the classes it contains. It's important to declare classes inside packages to gain legibility in our default package, but also because that classes put in a package are more easily transportable from one application to another.

7 An interface is a set of methods which need to be implemented. They're accessibles from outside the class, through which one can modify the object. It's important

to not change the interfaces because the declared methods are implemented and used in one or some classes.

8 In Java, classes can be private, package friendly, protected or public. For classes, methods and fields, the default visibility is package friendly.

9 An exception is an error occurring in a program that most often leads to stopping it. Unlike errors, exceptions can be handled. An Error indicates serious problems. Most such errors are abnormal conditions.

10 When a program terminates with an OutOfMemoryError, NoClassDefFoundErroror or NullPointerException, it means that the exceptions are not handled. The exceptions manage that the programer give as parameter of methods or array size. They allow to avoid errors caused during compilation.

11 In my program, I put in a « try » block the methods call that they can be problematic and I also write a catch block to display a message if a problem occurs. When it's necessary I write a condition inside methods to run an exception.

12 It's important to test the code/application/product, before to deliver it to a customer, boss or teacher to avoid an unexpected bug or error during or after the compilation.

13 The JavaDoc allows to document the code with some commentaries. It can document methods and classes. The documentation is automatically generated with a keyboard shortcut.