Licenciaturas em Engenharia Informática

Modelação e Design

AULAS LABORATORIAIS – 2017 / 2018

FICHA 6 – SEQUENCE DIAGRAMS

1. Consider the Java code represented in Figure 1:

a) For the code in Figure 1a) construct the sequence diagram corresponding to the invocation of the doOne operation.

b) For the code in Figure 1b) construct the sequence diagram corresponding to the invocation of the "doX" operation.

2. Consider the Java code shown in Figure 2. Construct the sequence diagram corresponding to the invocation of the "run" operation.

3. Regarding Question 1 of Sheet 4:

a) (for Q1.a) Consider that in the "Person/Owner" class, an operation is defined to print the information (for example, licence plate) of all the vehicles he/she owns. Construct the corresponding sequence diagram.

b) (for Q1.b) Consider that in the "Person" class an operation is defined to list all the friends of all friends (etc.) of that person. Construct the corresponding sequence diagram.

c) (for Q1.e) Consider that in the class "Run" is defined an operation that returns the total distance of this race. Construct two different sequence diagrams for this operation.

4. Regarding Question 2 of Sheet 4:

a) Consider that the "Text" class has an operation that returns the Formatting in a point of the text. Construct the corresponding sequence diagram.

b) Consider that the "Text" class has an operation that allows modifying the Formatting between two points of text. Construct the corresponding sequence diagram.

c) Consider that the class "Text" has an operation that allows adding, or inserting, a line with a certain format. Construct the corresponding sequence diagram.

5. Consider an application for sending email. When the user selects the "Send / Receive" option, the first operation to be performed by the application is to send all messages contained in the "Outbox" folder (through the sendMessages method). After successfully sending the messages, the messages are placed in the "SentMessages" folder. The application then checks whether, on the server, there is new mail (via the "checkNewMail" method) and, if there is, it will transfer any new messages to the "InBox" folder. Represent the appropriate objects and the corresponding sequence diagram.

```java
public class A {
    private B myB = new B();

    public void doOne() {
        myB.doTwo();
        myB.doThree();
    }
}


class B {
    public void doThree() {
        // ...
    }

    public void doTwo() {
        // ...
    }
}
```

Figure 1a

```java
public class Register {
    public void doX()   {
        // ...
        clear();
        // ...
    }

    public void clear() {
        // ...
    }
}
```

Figure 1b

```java
import java.util.Vector;

public class Driver {
    private StringContainer b = null;

    public static void main(String[] args){
        Driver d = new Driver();
        d.run();
    }

    public void run() {
        b = new StringContainer();
        b.add("One");
        b.add("Two");
        b.remove("One");
    }
}

class StringContainer {
    private Vector v = null;

    public void add(String s) {
        init();
        v.add(s);
    }

    public boolean remove(String s) {
        init();
        return v.remove(s);
    }

    private void init() {
        if (v == null)
            v = new Vector();
    }
}
```

Figure 2