CPSC 233 Final Review: 2004

Short answer

1) In the space provided below you are to implement the code for the method "setAllFields" as part of class "Child". This method will set the attributes num1, num2 & num3 to the value of three integers (value1, value2, value3) which are passed into setAllFields as parameters. Method setAllFields does not have a return value:

   a. The first parameter, "value1": The attribute "num1" will be set to the value of value1.
   b. The second parameter, "value2": The attribute "num2" will be set to the value of value2.
   c. Third parameter, "value3": The attribute "num3" will be set to the value of value3.
   d. Also be sure to define the signature and return value of method setAllFields as specified above.

```
public class Parent
{
    private int num1;
    private int num2;
    public Parent ()
    {
        num1 = 1;
        num2 = 2;
    }
    public void setNum1 (int newValue) { num1 = newValue; }
    public void setNum2 (int newValue) { num2 = newValue; }
    public int getNum1 () { return num1; }
    public int getNum2 () { return num2; }
}

public class Child extends Parent
{
    private int num3;
    public Child ()
    {
        super();
        num3 = 3;
    }
    public void setNum3 (int newValue) { num3 = newValue; }
    public int getNum3 () { return num3; }
```

   << **Write your answer here**>>
   public void setAllFields (int value1, int value2, int value3)   **(1 mark)**
   {
   setNum1(value1);   **(2 marks)**
   setNum2(value2);   **(2 marks)**
   setNum3(value3);   **(2 marks)**

   }
     << **End of answer space** >>
   }

2) For this question you are to extend the code shown in the program below. When the program first runs this program the GUI will look like the image in Figure 1. You are to write the code that will change the text of the button. When the button label says "On" it will toggle to "Off" when the button is clicked on and when the button label says "Off" it will toggle to "On" when the button is clicked.

(Base program)

```
class Driver
{
    public static void main (String [] args)
    {
        Frame myFrame = new Frame ("Plain window");
        Button myButton =new Button("On");
        myFrame.add(myButton);
        myFrame.setBounds(100,100,300,200);
        myFrame.setVisible(true);

        << Make any changes to the Driver class here >>
        MyButtonListener mbl = new MyButtonListener ();
        myButton.addActionListener(mbl);




            << End of answer space >>
    }
}

<< Make any changes to the rest of the program here >>
import java.awt.*;
import java.awt.event.*;

public class MyButtonListener implements ActionListener
{
    public void actionPerformed (ActionEvent e)
    {
        Button myButton = (Button) e.getSource ();
        if (myButton.getLabel().equals("On"))
            myButton.setLabel("Off");
        else if (myButton.getLabel().equals("Off"))
            myButton.setLabel("On");
    }
}
```
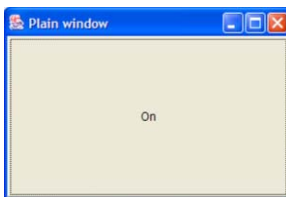
Figure 1

Multiple choice
1) Which of the following statements are true of Java programs?
   a) A class can implement more than one interface.

b) A class can extend more than one class.
c) Multiple inheritance is a built-in part of the language.
d) (b) & (c)
e) None of the above statements are true.

A

2) Which of the following statements are true about Java programs?
   a. Overriding refers to methods with the same name & parameter list but with separate definitions in the parent and child class.
   b. Overloading refers to methods that have the same name but are distinguished by their parameter lists.
   c. Preceding an attribute with the word private in a class definition is an example of information hiding e.g., class Foo { private int num; }
   d. One of the main differences between classes and interfaces is that classes have behavior whereas interfaces do not.
   e. All of the above are true

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