COMP2013 Mock ROGO Exam

UML

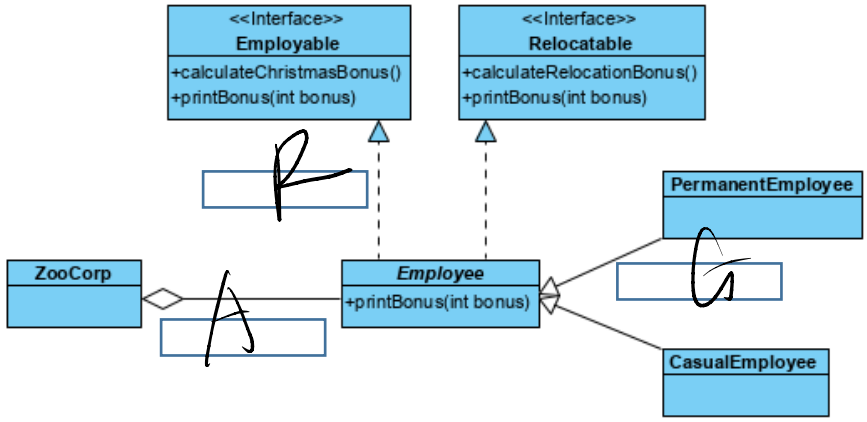
1. When maintaining a system you may be given some accompanying documentation. One such document is a UML Use Case Diagram.

a) What is the purpose of a Use Case Diagram? [3 marks]
b) In Use Case diagrams, what do Actors represent? [3 marks]
c) State TWO differences between a Use Case Diagram and an Activity Diagram [2 marks each]

(10 marks)

UML

2. The following is a section of a class diagram. Label the three indicated relationships (options are: Realisation; Aggregation; Composition; Generalisation).



(6 marks)

Git Usage

3. Look at the following screen which is of a local text file after pulling down changes from the remote repository.

```
<<<<<<< HEAD
Andrew French
Bob Smith
=======
Andrew French
Charlie Brown
>>>>>>> 16903c90448173db42eebc937fc2126891b1d98a
```

Fill in the blanks below in the text about the situation that is shown.

Blank 1.

a) an edit collision
b) a HEAD error
c) a 3-way commit
d) a push –force

Blank 2.

a) you need to edit and save the file as you wish it to appear
b) you need to delete all the text between the <<< >>> markers
c) you need to edit and increment the commit number at the end
d) Git can automatically perform a 3-way merge

Blank 3.

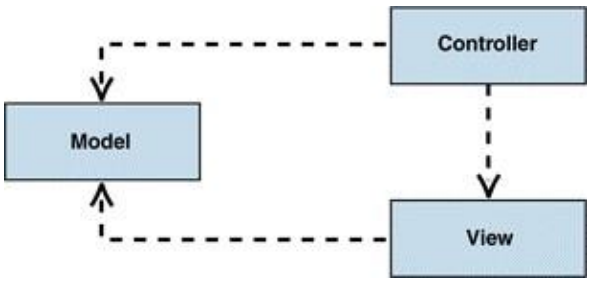
a) add commit push
b) commit push--force merge
c) commit add merge
d) pull merge commit

A git pull command produced the text above in your version-controlled text file. This is caused by [Blank 1]. To fix this, [Blank 2]. Then you must run the following three commands: [Blank 3].

(6 marks)

GUI Development

4. Describe one advantage of using this pattern when building a GUI:



(2 marks)

Software Maintenance

5. Which TWO of the following tasks fall under software maintenance?

a) Fixing existing coding errors
b) Developing a user survey
c) Adding additional requirements to a code base
d) Increasing a user base

(2 marks)

Object-oriented principles

6. Look at the code snippet below. Which type of relationship is implemented here?

```java
public class A {

    private B b;

    public A() {
        this.b = new B();
    }
}
```

a) Dependency
b) Aggregation
c) Composition
d) Association
e) No relationship present

(3 marks)

GUI Development

7. Examine the following code:

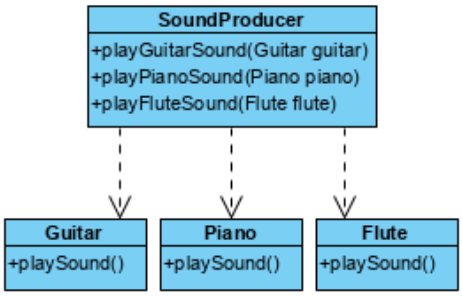
```
<children>
   <CheckBox layoutX="39.0" layoutY="34.0" mnemonicParsing="false" text="CheckBox" />
</children>
```

What type of code is this? What graphical elements does it produce and when would it be used?

(3 marks)

Design Principles

Explain the *open-closed principle*, one of the SOLID design principles [5 marks]. Why does the following diagram violate the *open-closed principle* and how can we fix this [5 marks]. Provide a class diagram with the improved design [2 marks]



(12 marks)

Overall 44 marks (should take about 26 minutes)