

Exempel på examinationsuppgifter 1dv607

// Construct a correct UML class and sequence diagram given the following pseudo code

```
Candy treat = new Candy()  
treat.doBar()
```

```
class Foo {  
    void doCandy(Fuu candy) {  
        candy.bar()  
    }  
}
```

```
class Candy : Foo {  
    Fuu candy;  
  
    void doBar() {  
        candy = new Fuu();  
        doCandy(candy)  
    }  
}
```

```
class Fuu {  
  
    bool bar() {  
  
        return true/false;  
    }  
}
```

// Construct a correct UML class and sequence diagram given the following pseudo code

```
Candy treat = new Candy()  
treat.doBar()
```

```
class Foo {  
    Fuu getCandy() {  
        return new Fuu()  
    }  
}
```

```
class Candy : Foo {  
    Fuu candy;  
  
    void doBar() {  
        candy = getCandy()  
        candy.bar()  
    }  
}
```

```
class Fuu {  
  
    bool bar() {  
  
        return true/false;  
    }  
}
```

```
// Construct a correct UML class and sequence diagram given the following pseudo code

Candy treat = new Candy()
treat.doBar()

class Foo {
    void doCandy(Fuu candy) {
        candy.bar()
    }
}

class Candy : Foo {
    Candy bar;

    void doBar() {
        Candy bar = new Candy()
        bar.doTreat()
        doTreat()
    }

    void doTreat() {
        Fuu candy = new Fuu()
        doCandy(candy)
    }
}

class Fuu {
    bool bar() {

        return true/false;
    }
}
```

// Construct a correct UML class and sequence diagram given the following pseudo code

```
Fuu candy = new Fuu()  
candy.bar()
```

```
class Foo {  
    bool doCandy() {  
        return true/false  
    }  
}
```

```
class Candy : Foo {  
    Fuu candy;  
  
    void doBar(Fuu bar) {  
        candy = bar;  
        doCandy()  
    }  
}
```

```
class Fuu {  
  
    bool bar() {  
        Candy c = new Candy()  
        c.doBar(this)  
    }  
}
```

```
//  
// This code is functional but has a glaring problem  
// Your task is to identify the problem and refactor it using  
// a standard OO-method. You should update the code and make a  
// correct UML class diagram over your solution  
//  
  
// example of usage  
Fuubar fb1 = new Fuu()  
Fuubar fb2 = new Bar()  
...  
fb1.DoStuff()  
fb2.DoStuff()  
  
interface Fuubar {  
    void DoStuff()  
}  
  
class Fuu : Fuubar {  
    Candy candy1  
    Wonky wonk  
    Candy candy2  
  
    void DoStuff() {  
  
        // these calls must always be done first  
        candy1.Do(65)  
        wonk.DoStuff("wabba")  
        candy1.Do(14)  
        candy1.Do(0)  
        candy1.Do(1)  
        wonk.DoStuff("wibbi")  
        candy1.Do(147)  
  
        // these calls are optional and could be different in a sub-class  
        candy2.Do(65)  
        candy2.Do(14)  
        candy2.Do(0)  
        candy2.Do(1)  
        candy2.Do(147)  
        wonk.DoStuff("webby")  
    }  
}  
  
class Bar : Fuubar {  
    Wonky wonk
```

```
Candy candy2

void DoStuff() {

    // these calls must always be done first
    candy2.Do(65)
    wonk.DoStuff("wabba")
    candy2.Do(14)
    candy2.Do(0)
    candy2.Do(1)
    wonk.DoStuff("wibbi")
    candy2.Do(147)

    candy2.Do(117)
    candy2.Do(137)
    wonk.DoStuff("jebby")
}

}

// Developer note: there is a high probability that we need to add more classes
// that realize the interface in the coming sprints

class Wonky {
    void DoStuff(string str) {
        ...
    }
}

class Candy {

    void Do(int number) {
        ...
    }
}
```

```
//  
// This code is functional but has a glaring problem  
// Your task is to identify the problem and refactor it using  
// a standard OO-method. You should update the code and make a  
// correct UML class diagram over your solution  
//  
  
// example of usage  
Fuu f = new Fuu(1, 3)  
f.DoStuff()  
  
class Fuu {  
    int typeOfAlgorithm1  
    int typeOfAlgorithm2  
  
    Fuu(int algo1, int algo2) {  
        typeOfAlgorithm1 = algo1  
        typeOfAlgorithm2 = algo2  
    }  
  
    int DoStuff() {  
        int result1;  
        int result2;  
  
        switch (typeOfAlgorithm1) {  
            case 1:  
                result1 = DoAlgorithm1A()  
                break;  
            case 2:  
                result1 = DoAlgorithm1B()  
                break;  
            case 3:  
                result1 = DoAlgorithm1C()  
                break;  
        }  
  
        switch (typeOfAlgorithm2) {  
            case 1:  
                result2 = DoAlgorithm2A(result1)  
                break;  
            case 2:  
                result2 = DoAlgorithm2B(result1)  
                break;  
            case 3:  
                result2 = DoAlgorithm2C(result1)  
        }  
    }  
}
```

```
        break;  
    }  
  
    return result2;  
}  
  
int DoAlgorithm1A() {  
    // A massive amount of special code A  
    ...  
}  
  
int DoAlgorithm1B() {  
    // A massive amount of special code B  
    ...  
}  
  
int DoAlgorithm1C() {  
    // A massive amount of special code C  
    ...  
}  
  
int DoAlgorithm2A(int number) {  
    // A massive amount of special code D  
    ...  
}  
  
int DoAlgorithm2B(int number) {  
    // A massive amount of special code E  
    ...  
}  
  
int DoAlgorithm2C(int number) {  
    // A massive amount of special code F  
    ...  
}  
}
```

```

//  

// This code uses the Model-View-Controller architectural pattern  

// but has a glaring problem Your task is to identify the problem  

// and solve it using a standard OO-method.  

// You should update the code and make a  

// correct UML class diagram over your solution  

//  

model.Foo f = new model.Foo()  

view.IView v = new View()  

controller.Controller c = new Controller(f, v)  

  

c.Do()  

  

namespace controller {  

    class Controller {  

        model.Foo model;  

        view.IView view;  

  

        Controller(model.Foo m, view.IView view) {  

            model = m  

            view = v  

        }  

  

        void Do() {  

  

            if (v.UserWantsToDoBusinessLogic()) {  

                if (m.DoSomeBusinessLogic() != true) {  

                    v.DrawErrorMessage()  

                }  

                v.DrawInterface()  

            }  

        }  

    }  

}  

  

namespace view {  

    interface IView {  

        void UpdateProgress(string progressMessage)  

        void DrawInterface()  

        bool UserWantsToDoBusinessLogic()  

        void DrawErrorMessage()  

    }  

  

    class View : IView {  


```

```
void UpdateProgress(string progressMessage) {
    // show progress in user interface
}

void DrawInterface() {
    // Draw some gui stuff including the results
    ...
}

bool UserWantsToDoBusinessLogic() {
    ...
}

void DrawErrorMessage() {
    ...
}

namespace model {

    class Foo {

        IView iv;

        Foo() {
            iv = new View()
        }

        bool DoSomeBusinessLogic() {
            ...
            iv.UpdateProgress("0%")
            // some time consuming stuff
            ...
            iv.UpdateProgress("10%")
            // some time consuming stuff
            ...
            iv.UpdateProgress("20%")
            // some time consuming stuff
            ...
            ...
            iv.UpdateProgress("100%")

            return true
        }
    }
}
```

}