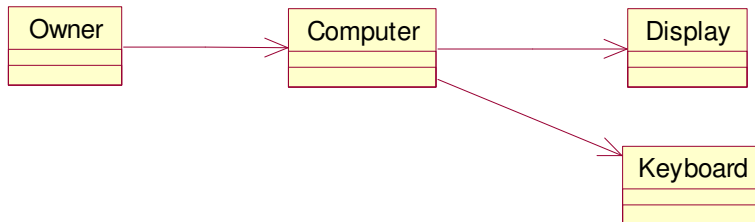# Computer exercise

(thanks to Mogens)

In this exercise we will simulate a computer using a collection of objects. The purpose of the exercise is to practice cooperation between objects as well as to see how object encapsulation can make it easy to programmer. Class diagram looks like this as a starting point:

Create a BlueJ project called Computer

Display class

1. Add a class Display that have the following instance variables: height , width , isFlatScreen , haveLoudSpeakers and description.
2. You will need to determine the type of the fields.
3. Define a constructor for the class and set and get methods for all fields . The constructor must initialize all fields .
4. Define a printing method that prints all the information about on-screen display
5. Test class

Keyboard class

1. Add another class Keyboard with the following attributes: model, isWireless, language
2. Define a constructor for the class and mutator and accessor methods.
3. Add a method that returns the first two letters of the field language
4. Define a printing method that prints all fields on the screen and the first 2 letters of the field languge
5. Test class

Computer class

1. Create class computer with the following fields: cpuspeed , RAM , hard drive size , model , description
2. Define a constructor and set and get methods for all fields
3. Define a print method for all attributes
4. Test class

Owner class

1. Create the class Owner with the following attributes: name , address , zipcode and city
2. As before made constructor and set and get methods
3. Define a printing method that prints all attributes
4. Test the class

Computer class

Now we have all the building blocks in the project and must have them to cooperate:

1. In order to form connections from Computer to Display and Keyboard it must be added two objects myDisplay of type Display and myKeboard of type Keyboard .
2. Extend the printing method to print information from the Display and Keyboard
3. Test the class
4. What error do you get ?

Owner class

1. The connection from the Owner to Computer is made by adding an object myComputer of type Computer
2. Extend printing method to also print information about the associated computer. What do you need to remember to make it work?
3. Test the class
4. Do you get the same error as last subtask? use the debugger to find and fix it.

Additional exercise

Try adding a class Mouse with appropriate fields and a print method.

Add an object of type Mouse to the class Computer and make an extra constructor so that it can be initialized via a parameter.

Make a change in the print method in Computer so that it calla Mouse's print method

Try the printing in Owner and see what happens, why do we do it this way?