Programming Session 2 Exercises

Review Questions:

1. What is a class?
2. What is an object?
3. What is the connection between a class and an object?
4. What are parameters used for?
5. What is a method?
6. How many parameters (minimum and maximum) can a method have?
7. What is a data type?
8. What is the purpose of having different data types in a programming language like Java?
9. Which data types do you know of in Java?
10. What are the functions of a compiler?
11. What is the maximum number of lines of source code in a Java program?

Banking Exercise No 1:

1. Create a new BlueJ project called Bank.
2. Create a new class called BankAccount. Select Class as Class Type.
3. How can the BlueJ created code be displayed? Try it!
4. Compile the class BankAccount without changing the BlueJ generated code.
5. Create an instance (an object) of the class BankAccount. What is displayed in the BlueJ window?
6. What can be done with the object? Try some of the possibilities!
7. On a bank account object it is reasonable to have an attribute containing information about the accounts balance. Open the source code for class BankAccout in the editor and add the attribute, for instance: *private double balance;* - Where in the source code is the attribute to be added?
8. Recompile the class, create an object of the class and select inspect. What is displayed?
9. Write a constructor that initialise balance to 0 (zero).
10. Add a mutator method to class BankAccount that makes it possible to deposit an amount in the account. Use the following method heading: *public void deposit(double amount)*
11. Run the method. Is the balance increased with the value of the parameter amount?
12. Add a mutator method to class BankAccount that makes it possible to withdraw an amount from the account. Use the following method heading: *public boolean withdraw(double amount)*
13. If the amount exceeds the balance, the method is to return false and leave the balance unchanged. Otherwise true is to be returned and the balance updated accordingly.
14. Run the method and try to withdraw an amount less than the balance. Is the balance updated correctly and does the method return the correct value? Try the same with an amount which is larger than the balance. Does the method work correctly in this case?
15. Add an accessor method to class BankAccount that returns the balance of the account. Use the following method heading: *public double getBalance()*
16. Add an accessor method to class BankAccount that returns the text “You are rich!”, if the balance exceeds DKK 1,000,000. Otherwise, return some suitable text of your choice. Figure out the method heading yourself