

## 02324 Advanced Programming, exercises Week 3

### Extending BMI application based on the 3 layer architecture with exceptions

The BMI program from the last lesson should be extended with exceptions.

#### Task 1. Catching *IndexOutOfBoundsException* on *ArrayList* class

1. The *ArrayList* class which is used in the *Data* class throws an *IndexOutOfBoundsException* if the indexed outside array borders.
2. Rewrite the getter methods in the *Data* class so that these are now no longer using the for-loop, but just goes through array elements in an infinite while loop until either the item is found, or there is an *IndexOutOfBoundsException*.
3. Catch an *IndexOutOfBoundsException* and the corresponding catch block return null for a *String* return type and -1.0 for a *double* return type.

#### Task 2. Throwing own *DataException*

1. You should now make your own exception class, *DataException*. Expand the interface *IData* so all of its methods throw a *DataException*.
2. Define the class *DataException* which must be inherited from the *Exception*.
3. *DataException* is thrown from the getter methods in the *Data* class if a person with a given cpr-nr does not exist.
4. Change the BMI program that *DataException* is propagated up to the interface level where it is caught and treated, e.g. printing an error message to the user.