Institut for Matematik og Datalogi
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Programmering B
7th Weekly Note (E10, Week 51)

Support for 2nd Part of Project

The primary forum for discussing questions about the project and asking for help is the discussion board of the course in Blackboard ("Discussion Board", "Project Part 2"). In this way, everyone can profit from each question and each answer.

I will answer questions each Monday and Thursday from 12–14. Outside of these times, I will answer as my time permits. In the meanwhile, you are free (and actually cordially invited) to discuss questions in between each other. In this way, you can help each other with this project. Please discuss any topic you like. Just do not post larger snippets (> 3-4 lines of code).

Reading for Week 51

In "Jave Software Solutions":

- Packages: Section 3.3.
- Exceptions: Section 10.5.

In "The Java Tutorials":

- Packages: `http://java.sun.com/docs/books/tutorial/java/package/`

Lecture: Tuesday, December 21, 10-12 (U140)

We continue with Generics. Then we introduce packages. Finally we revisit Java's exceptions system.

Lab: see schedule for time and room

- PP 8.11 (p. 509) in "Java Software Solutions"

- Use generics to solve the following task from "The Java Tutorials":
  Design a class that acts as a library for the following kinds of media:
  book, video, and newspaper. Provide one version of the class that uses
  generics and one that does not. Feel free to use any additional APIs
  for storing and retrieving the media.

- Discuss and get help with your project!

Discussion: see schedule for time and room

- Solve the following task from "The Java Tutorials":
  Consider the following classes:

```
public class AnimalHouse<E> {
    private E animal;

    public void setAnimal(E x) {
        animal = x;
    }

    public E getAnimal() {
        return animal;
    }
}

public class Animal{
}

public class Cat extends Animal {
}

public class Dog extends Animal {
}
```

For the following code snippets, identify whether the code:

- – fails to compile,
- – compiles with a warning,
- – generates an error at runtime, or
- – none of the above (compiles and runs without problem).

Here are the code snippets:

1. `AnimalHouse<Animal> house = new AnimalHouse<Cat>();`

2. `AnimalHouse<Dog> house = new AnimalHouse<Animal>();`

3. `AnimalHouse<?> house = new AnimalHouse<Cat>();`
   `house.setAnimal(new Cat());`

4. `AnimalHouse house = new AnimalHouse();`
   `house.setAnimal(new Dog());`

- Discuss the project, in particular how BFS can be extended to compute the shortest path from one node to another while returning the length of the path.

- Discuss and explain the following concepts to be used in the project:

  - – Inheritance
  - – Abstract Classes and Methods