Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

Quellcode Serie 03 - Programmieren 1

Aufgabe 1.)

src > kap3 > Thermometer.java > Thermometer > getTemp()

```java
package kap3;

public class Thermometer {

    private double temp;

    public Thermometer(Double temp) {
        //Temperatur soll standartmässig auf 37 gesetzt sein
        this.temp = 37;
    }
        //getter
    public double getTemp(){
        return temp;
    }

    public void increase(){
        temp += 0.1;
    }

    public void reset(){
        //Thermometer zurücksetzen
        temp = 37;
    }
}

```

Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

src > kap3 > ThermometerTest.java > ...

```java
package kap3;
import kap3.Thermometer;
public class ThermometerTest {
Run | Debug
public static void main(String[] args) {
    Thermometer t1 = new Thermometer(37.0);
    t1.increase();
    t1.increase();
    Thermometer t2 = new Thermometer(37.0);
    t2.increase();
    t2.increase();
    t2.increase();
    //Konstruktor setzt Temperatur sowiso auf 37.0
    //nur wichtig dass man double einsetzt und nicht int
    //da Konstruktor double verlangt
    Thermometer t3 = new Thermometer(10.0);
    t3.increase();
    t3.increase();
    t3.increase();
    t3.increase();
    System.out.println(t3.getTemp());
    if(t1.getTemp() == 37.2){
        System.out.println("increase() & getTemp() funktionieren");
    }
    if(t2.getTemp() >= 37.2){
        t2.reset();
        System.out.println(t2.getTemp() + "reset() funktioniert auch" );
    }
    }
}
```

Zeile 2, Spalte 25 Leerzeichen: 4 UTF-8

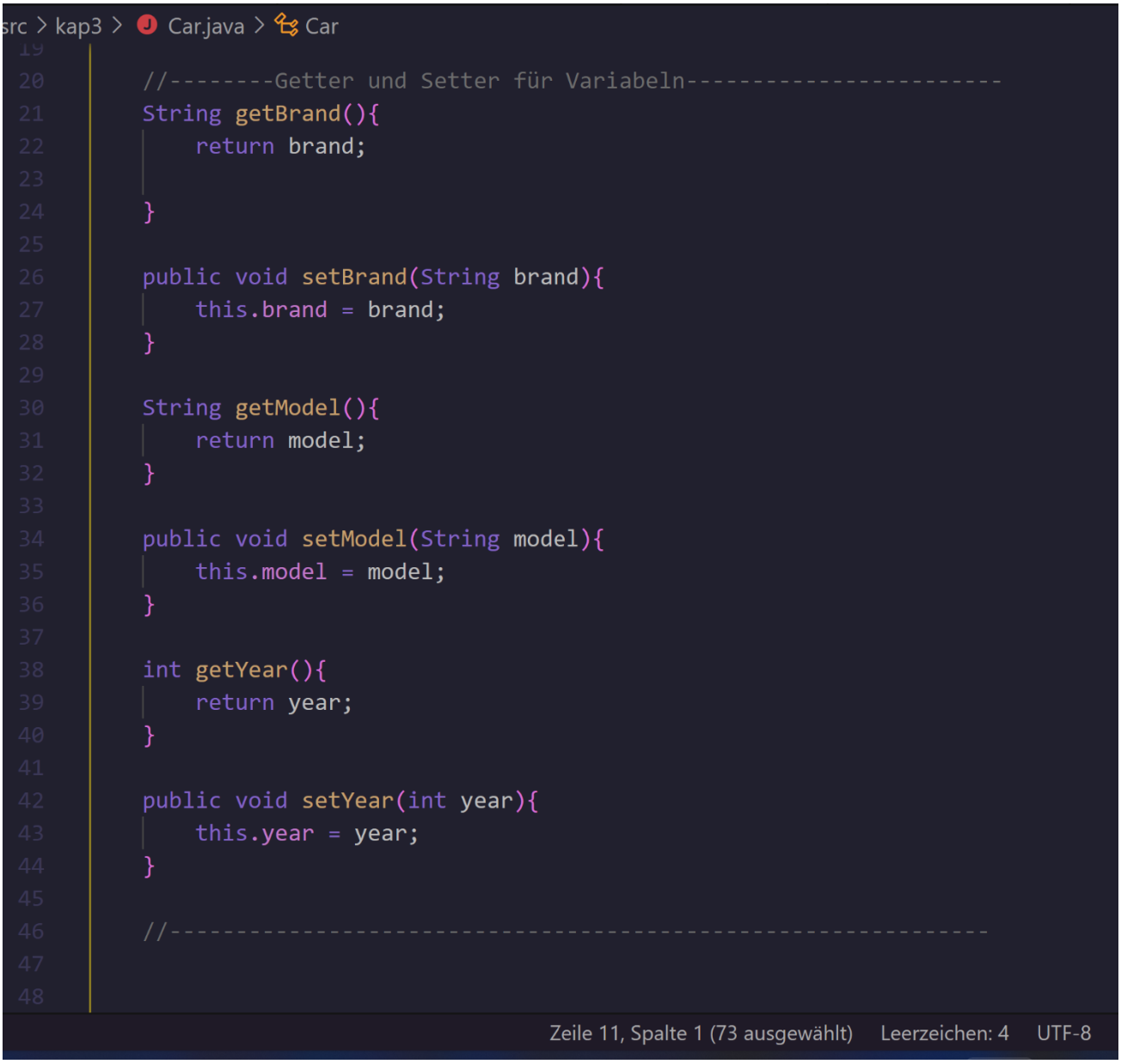
Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

Aufgabe 2.)

src > kap3 > Car.java > Car

```java
package kap3;

import java.util.Calendar;

public class Car {

    String brand;
    String model;
    int year;
    static int actualYear = Calendar.getInstance().get(Calendar.YEAR);
    boolean antique;

    public Car(String brand, String model, int year){
        this.brand = brand;
        this.model = model;
        this.year = year;

    }

    //--------Getter und Setter für Variabeln-----------------------
    String getBrand(){
        return brand;

    }

    public void setBrand(String brand){
        this.brand = brand;
    }

    String getModel(){
```

Zeile 11, Spalte 1 (73 ausgewählt) Leerzeichen: 4 UTF-8


src > kap3 > Car.java > Car
//--------Getter und Setter für Variabeln-----------------------
String getBrand(){
return brand;
}
public void setBrand(String brand){
this.brand = brand;
}
String getModel(){
return model;
}
public void setModel(String model){
this.model = model;
}
int getYear(){
return year;
}
public void setYear(int year){
this.year = year;
}
//--
Zeile 11, Spalte 1 (73 ausgewählt) Leerzeichen: 4 UTF-8

src > kap3 > Car.java > Car

```
48
49      //Funktion zum checken ob Auto älter ist als 45 Jahre und ändert
50      //boolean Wert
51      public void isAntique(){
52
53          if ((actualYear - year) > 45){
54              antique = true;
55              System.out.println(antique);
56          }
57
58          else{
59              antique = false;
60              System.out.println(antique);
61          }
62
63
64      }
65
66
67      public String toString() {
68          String y = Integer.toString(year);
69          return this.getBrand() + "," + this.getModel() + "," + y ;
70      }
71
72
73  }
74
```

Zeile 11, Spalte 1 (73 ausgewählt) Leerzeichen: 4 UTF-8

Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

src > kap3 > Garage.java > ...

```java
package kap3;
import kap3.Car;
public class Garage {

    Run | Debug
    public static void main(String[] args) {



        Car c1 = new Car("Toyota", "Supra MK4", 2001);
        Car c2 = new Car("Hyundai", "i30 N", 2021);
        Car c3 = new Car("Dodge", "Challenger", 1970);


        System.out.println(c1.toString());
        c3.isAntique(); //test ob antique funktioniert
        System.out.println(c2.getBrand()); //test ob getter funktioniert
        System.out.println(c3.toString());
        c3.setYear(2010);   //test ob setter funktioniert
        System.out.println(c3.toString());

    }

}
```

Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

Aufgabe 3.)

src > kap3 > Cargo.java > Cargo > Cargo(int, int, int, String)

```java
package kap3;

public class Cargo {

    int lenght;
    int widht;
    int height;
    String name;

    public Cargo(int lenght, int widht, int height, String name){
        this.lenght = lenght;
        this.widht = widht;
        this.height = height;
        this.name = name;
        }


    //------------------Getter und Setter-----------------------------

    int getLenght(){
        return lenght;
    }

    public void setLenght(int lenght){
        this.lenght = lenght;
    }

    int getWidth(){
        return widht;
    }
```

Zeile 11, Spalte 1 (67 ausgewählt) Leerzeichen: 4 UTF-8

src > kap3 > Cargo.java > Cargo > toString()

```
28      int getWidth(){
29          return widht;
30      }
31
32      public void setWidth(int widht){
33          this.widht = widht;
34      }
35
36      int getHeight(){
37          return height;
38      }
39
40      public void setHeight(int height){
41          this.height = height;
42      }
43
44      String getName(){
45          return name;
46      }
47
48      public void setName(String name){
49          this.name = name;
50      }
51      //-------------------------------------------------------
52
53      public String toString() {
54          return this.widht + this.lenght + this.height + name;
55      }
56  }
```

Zeile 55, Spalte 1 (63 ausgewählt) Leerzeichen: 4 UTF-8

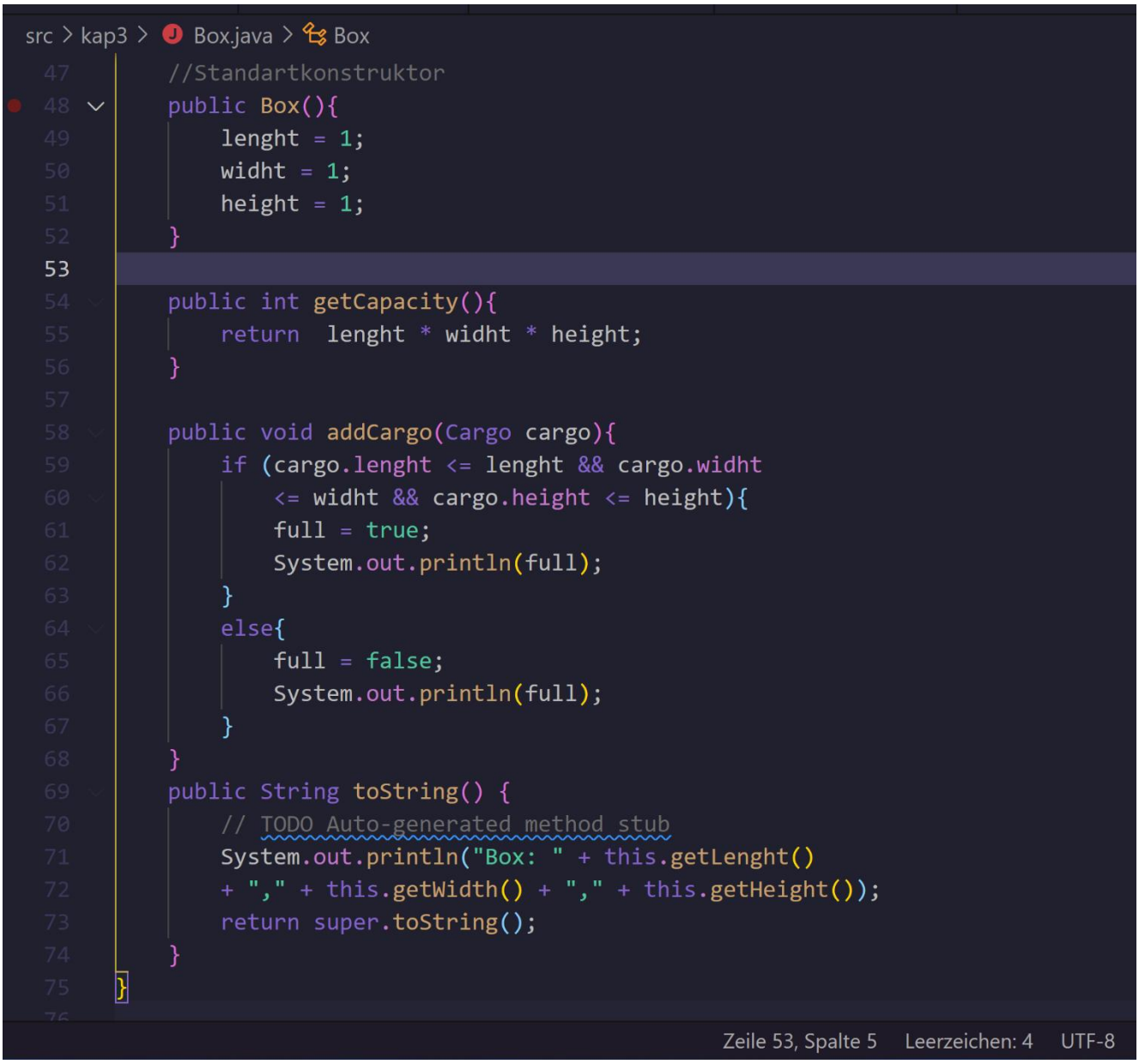
Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

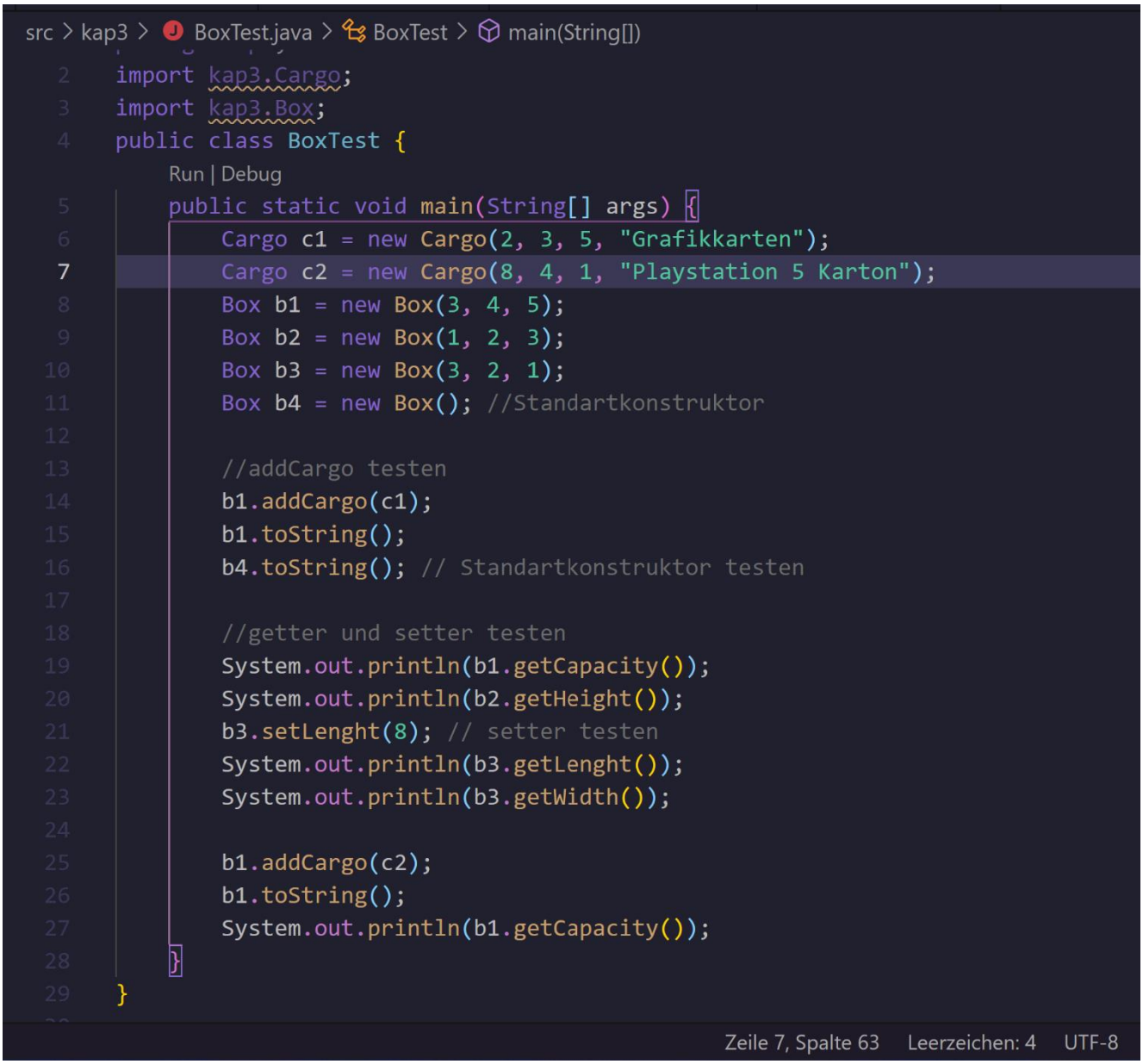
src > kap3 > Box.java > ...

```java
package kap3;
import kap3.Cargo;
public class Box {
    int lenght;
    int widht;
    int height;
    Cargo cargo;


    boolean full;

    public Box(int lenght, int widht, int height){

        this.lenght = lenght;
        this.widht = widht;
        this.height = height;
    }

    //-------------------Getter und Setter----------------
    int getLenght(){
        return lenght;

    }

    public void setLenght(int lenght){
        this.lenght = lenght;
    }

    int getWidth(){
        return widht;
```

Zeile 2, Spalte 19 Leerzeichen: 4 UTF-8


src > kap3 > Box.java > Box > getLenght()
25
26 public void setLenght(int lenght){
27 this.lenght = lenght;
28 }
29
30 int getWidth(){
31 return widht;
32 }
33
34 public void setWidth(int widht){
35 this.widht = widht;
36 }
37
38 int getHeight(){
39 return height;
40 }
41
42 public void setHeight(int height){
43 this.height = height;
44 }
45 //----------
46
47 //Standartkonstruktor
48 public Box(){
49 lenght = 1;
50 widht = 1;
51 height = 1;
52 }
53
Zeile 21, Spalte 1 (60 ausgewählt) Leerzeichen: 4 UTF-8


src > kap3 > Box.java > Box
47 //Standartkonstruktor
48 public Box(){
49 lenght = 1;
50 widht = 1;
51 height = 1;
52 }
53
54 public int getCapacity(){
55 return lenght * widht * height;
56 }
57
58 public void addCargo(Cargo cargo){
59 if (cargo.lenght <= lenght && cargo.widht
60 <= widht && cargo.height <= height){
61 full = true;
62 System.out.println(full);
63 }
64 else{
65 full = false;
66 System.out.println(full);
67 }
68 }
69 public String toString() {
70 // TODO Auto-generated method stub
71 System.out.println("Box: " + this.getLenght()
72 + "," + this.getWidth() + "," + this.getHeight());
73 return super.toString();
74 }
75 }
Zeile 53, Spalte 5 Leerzeichen: 4 UTF-8


src > kap3 > BoxTest.java > BoxTest > main(String[])
import kap3.Cargo;
import kap3.Box;
public class BoxTest {
Run | Debug
public static void main(String[] args) {
Cargo c1 = new Cargo(2, 3, 5, "Grafikkarten");
Cargo c2 = new Cargo(8, 4, 1, "Playstation 5 Karton");
Box b1 = new Box(3, 4, 5);
Box b2 = new Box(1, 2, 3);
Box b3 = new Box(3, 2, 1);
Box b4 = new Box(); //Standartkonstruktor
//addCargo testen
b1.addCargo(c1);
b1.toString();
b4.toString(); // Standartkonstruktor testen
//getter und setter testen
System.out.println(b1.getCapacity());
System.out.println(b2.getHeight());
b3.setLenght(8); // setter testen
System.out.println(b3.getLenght());
System.out.println(b3.getWidth());
b1.addCargo(c2);
b1.toString();
System.out.println(b1.getCapacity());
}
}
Zeile 7, Spalte 63 Leerzeichen: 4 UTF-8

Aufgabe 4.)

Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

src > kap3 > Book.java > Book

```java
package kap3;

/* ********************************************************************** *\
*                Programmierung 1 HS 2020 - Serie 3-1                     *
\* ********************************************************************** */

import java.util.Date;
import java.util.Scanner;
import java.util.concurrent.TimeUnit;
import java.text.*;

public class Book
{
    private int id;
    private String title;
    private String author;
    private Date dateOfPublication;

    public static final String DATE_FORMAT = "dd.MM.yyyy";

    //--- constructors ---
    public Book(int id, String title, String author, Date dateOfPublication){

        this.id = id;
        this.title = title;
        this.author = author;
        this.dateOfPublication = dateOfPublication;

    }
```

Zeile 20, Spalte 1 Tabulatorgröße: 4 UTF-8 CRLF

src > kap3 > Book.java > Book

```
27          this.dateOfPublication = dateOfPublication;
28
29      }
30
31      /** Returns the age of the book in days since publication */
32      public long age()
33      {
34          return (long) TimeUnit.MILLISECONDS.toDays((new Date().getTime()
35          - dateOfPublication.getTime()));
36
37      }
38
39      /** Returns a String representation of the book */
40      public String toString()
41      {
42          Date d = this.getDate();
43          return "Id: " + this.getID() +  ", Title: " + this.getTitle()
44          + ", Author: " + this.getAuthor() + ", Publication: "
45          + this.dateToString(d);
46      }
47
48      /** Reads all book data from user input */
49      public void input()
50      {
51          Scanner scn = new Scanner( System.in );
52          System.out.print( "Please enter id: " );
53          int a = scn.nextInt();
54          scn.nextLine();
55          setID(a);
56          System.out.print( "Please enter title: " );
```

Zeile 20, Spalte 1 Tabulatorgröße: 4 UTF-8 CRLF

src > kap3 > Book.java > Book

```
47
48      /** Reads all book data from user input */
49      public void input()
50      {
51          Scanner scn = new Scanner( System.in );
52          System.out.print( "Please enter id: " );
53          int a = scn.nextInt();
54          scn.nextLine();
55          setID(a);
56          System.out.print( "Please enter title: " );
57          String b = scn.nextLine();
58          setTitle(b);
59          System.out.print( "Please enter author: " );
60          String c = scn.next();
61          setAuthor(c);
62          System.out.print( "Please enter date of publication: " );
63          String d = scn.next();
64          setDate(stringToDate(d));
65
66
67      }
68
69      //--- Get-/Set-methods ---
70      int getID(){
71          return id;
72
73      }
74
75      public void setID(int id){
76
```

Zeile 20, Spalte 1 Tabulatorgröße: 4 UTF-8

Jara Zihlmann(20-117-032) Vithusan Ramalingam (21-105-515) Jan Ellenberger (21-103-643)

src > kap3 > Book.java > Book

```
73
74      public void setID(int id){
75          this.id = id;
76      }
77
78      String getTitle(){
79          return title;
80      }
81
82      public void setTitle(String title){
83          this.title = title;
84      }
85
86      String getAuthor(){
87          return author;
88      }
89
90      public void setAuthor(String author){
91          this.author = author;
92      }
93
94      Date getDate(){
95          return dateOfPublication;
96      }
97
98      public void setDate(Date dateOfPublication){
99          this.dateOfPublication = dateOfPublication;
100     }
101
102     //--- helper methods -- DO NOT CHANGE ----------------------------------
```

Zeile 101, Spalte 1 Tabulatorgröße: 4 UTF-8

```java
    //--- helper methods -- DO NOT CHANGE -----------------------------------
    /** Converts the Date object d into a String object */
    public static String dateToString( Date d )
    {
        SimpleDateFormat fmt = new SimpleDateFormat( DATE_FORMAT );
        return fmt.format( d );
    }

    /** Converts the String object s into a Date object */
    public static Date stringToDate( String s )
    {
        Date r = null;
        try {
            SimpleDateFormat fmt = new SimpleDateFormat( DATE_FORMAT );
            r = fmt.parse( s );
        } catch ( ParseException e ){
            System.err.println( e );
            System.exit(1);
        }
        return r;
    }
}
```

Zeile 101, Spalte 1 Tabulatorgröße: 4 UTF-8 CRLF

src > kap3 > BookShelf.java > BookShelf > main(String[])

```java
package kap3;
import kap3.Book;

/*
Jara Zihlmann(20-117-032)
Vithusan Ramalingam (21-105-515)
Jan Ellenberger (21-103-643)
*/

public class BookShelf {

    Run | Debug
    public static void main(String[] args) {
        Book book1 = new Book(1, "title", "author",
        new java.util.Date(System.currentTimeMillis()) );

        book1.input();
        System.out.println(book1.getID());
        System.out.println(book1.toString());
        System.out.println(book1.age() + " " + "Days old");

    }

}
```

Zeile 21, Spalte 6 Leerzeichen: 4 UTF-8 CRLF