

```

1  /* ***** */
2  *           Programmierung 1 HS 2018 - Serie 3-1           *
3  *           Jonas Gehrlein (15-127-541) & Jan Dietrich (10-100-436) *
4  *           File: Book.java                               *
5  \* ***** */
6  import java.util.Date;
7  import java.util.Scanner;
8  import java.text.*;
9
10 public class Book
11 {
12     private int id;
13     private String title;
14     private String author;
15     private Date dateOfPublication;
16
17     // Initialize variables
18     // Scanner Variables
19     int scn_id;
20     String scn_title, scn_author;
21     String scn_date;
22     // Other Variables
23     int days_since_publication;
24
25     public static final String DATE_FORMAT = "dd.MM.yyyy";
26
27     //--- constructors ---
28     // TODO: Insert your code here!
29     public Book (int id_input, String title_input, String author_input, String
date_input)
30     {
31         id = id_input;
32         title = title_input;
33         author = author_input;
34         dateOfPublication = stringToDate(date_input);
35     }
36
37
38     /** Returns the age of the book in days since publication */
39     public int age()
40     {
41         // TODO: Insert your code here!
42         Date date_today = new Date(); // Initiates a Date object..
43
44         // Returns the time passed in ms from the epoch year until today.
45         long ms_since_epoch_to_today = date_today.getTime();
46
47         // Calculates the days of publication from the epoch year.
48         long ms_since_epoch_to_publication = dateOfPublication.getTime();
49
50         // Calculates the days from the publication until today which is the
difference between the days from the epoch year until today and the days
between publication and epoch year.
51         long days_since_publication_to_today = (ms_since_epoch_to_today -
ms_since_epoch_to_publication) / 86400000L;
52
53         // Passes the value of the long variable to an int variable to match the
return type of the method.
54         days_since_publication = (int) days_since_publication_to_today;
55
56         return days_since_publication;
57     }
58
59     /** Returns a String representation of the book */
60     public String toString()
61     {
62         return (id + ", " + title + ", " + author + ", " +
dateToString(dateOfPublication));
63     }
64
65     /** Reads all book data from user input */
66     public void input()
67     {

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68         // TODO: Insert your code here!
69         Scanner user_input = new Scanner( System.in );
70         System.out.print( "Please enter id: " );
71         id = user_input.nextInt();
72
73         System.out.print( "Please enter author: " );
74         author = user_input.next();
75
76         System.out.print( "Please enter title: " );
77         title = user_input.next();
78
79         System.out.print( "Please enter date of publication: " );
80         dateOfPublication = stringToDate(user_input.next());
81     }
82
83     //----Set-methods ---
84     public int setID(int scn_id)
85     {
86         id = scn_id;
87         return id;
88     }
89
90     public String setAuthor(String scn_author)
91     {
92         author = scn_author;
93         return author;
94     }
95
96     public String setTitle(String scn_title)
97     {
98         title = scn_title;
99         return title;
100    }
101
102    public Date setDate(String scn_date)
103    {
104        dateOfPublication = stringToDate(scn_date);
105
106        return dateOfPublication;
107    }
108
109    //--- Get-methods/-----
110    public int getID()
111    {
112        return id;
113    }
114
115    public String getAuthor()
116    {
117        return author;
118    }
119
120    public String getTitle()
121    {
122        return title;
123    }
124
125    public Date getDate()
126    {
127        return dateOfPublication;
128    }
129
130    // TODO: Insert your code here!
131
132    //--- helper methods -- DO NOT CHANGE -----
133    /** Converts the Date object d into a String object */
134    public static String dateToString( Date d )
135    {
136        SimpleDateFormat fmt = new SimpleDateFormat( DATE_FORMAT );
137        return fmt.format( d );
138    }
139
140    /** Converts the String object s into a Date object */

```

```
141 public static Date stringToDate( String s )
142 {
143     Date r = null;
144     try {
145         SimpleDateFormat fmt = new SimpleDateFormat( DATE_FORMAT );
146         r = fmt.parse( s );
147     } catch ( ParseException e ){
148         System.err.println( e );
149         System.exit(1);
150     }
151     return r;
152 }
153 }
154
```