```java
/* ************************************************************************ *\
*                        Programmierung 1 HS 2018 - Serie 3-2                *
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*                                  File: Book.java                           *
\* ************************************************************************ */
import java.util.Date;
import java.util.Scanner;
import java.text.*;

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

    // Other Variables
    int days_since_publication;

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

    //--- constructors ---
    // TODO: Insert your code here!
    // Constructor Overload
    public Book ()
    {
        id = 0;
        title = "EMPTY";
        author = "EMPTY";
        dateOfPublication = stringToDate("00.00.0000");
        price = 0;

    }

    public Book (int id_input,String title_input, String author_input, Date
    date_input, int price_input)
    {
        id = id_input;
        title = title_input;
        author = author_input;
        dateOfPublication = date_input;

        if (price_input < 0)
            price = 0;
        else
            price = price_input;

    }


    /** Returns the age of the book in days since publication */
    public int age()
    {
        // TODO: Insert your code here!
        Date date_today = new Date(); // Initiates a Date object..

        // Returns the time passed in ms from the epoch year until today.
        long ms_since_epoch_to_today = date_today.getTime();

        // Calculates the days of publication from the epoch year.
        long ms_since_epoch_to_publication = dateOfPublication.getTime();

        // 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.
        long days_since_publication_to_today = (ms_since_epoch_to_today -
        ms_since_epoch_to_publication) / 86400000L;

        // Passes the value of the long variable to an int variable to match the
        return type of the method.
        days_since_publication = (int) days_since_publication_to_today;

```

```
69          return days_since_publication;
70      }
71
72      /** Returns a String representation of the book */
73      public String toString()
74      {
75          return (id + ", " + title + ", " +  author + ", " +
            dateToString(dateOfPublication));
76      }
77
78      /** Reads all book data from user input */
79      public void input()
80      {
81          // TODO: Insert your code here!
82          Scanner user_input = new Scanner( System.in );
83          System.out.print( "Please enter id: " );
84          id = user_input.nextInt();
85
86          System.out.print( "Please enter author: " );
87          author = user_input.next();
88
89          System.out.print( "Please enter title: " );
90          title = user_input.next();
91
92          System.out.print( "Please enter date of publication: " );
93          dateOfPublication = stringToDate(user_input.next());
94      }
95
96      //----Set-methods ---
97      public int setID(int scn_id)
98      {
99          id = scn_id;
100         return id;
101     }
102
103     public String setAuthor(String scn_author)
104     {
105         author = scn_author;
106         return author;
107     }
108
109     public String setTitle(String scn_title)
110     {
111         title = scn_title;
112         return title;
113     }
114
115     public Date setDate(String scn_date)
116     {
117         dateOfPublication = stringToDate(scn_date);
118
119         return dateOfPublication;
120     }
121
122     public int setPrice(int scn_price)
123     {
124         if (scn_price < 0)
125             price = 0;
126         else
127             price = scn_price;
128
129         return price;
130     }
131
132     //--- Get-methods/-------
133     public int getID()
134     {
135         return id;
136     }
137
138     public String getAuthor()
139     {
140         return author;
```

```
141         }
142
143         public String getTitle()
144         {
145             return title;
146         }
147
148         public Date getDate()
149         {
150             return dateOfPublication;
151         }
152
153         public int getPrice()
154         {
155             return price;
156         }
157
158         // TODO: Insert your code here!
159
160         //--- helper methods -- DO NOT CHANGE -----------------------------------
161         /** Converts the Date object d into a String object */
162         public static String dateToString( Date d )
163         {
164             SimpleDateFormat fmt = new SimpleDateFormat( DATE_FORMAT );
165             return fmt.format( d );
166         }
167
168         /** Converts the String object s into a Date object */
169         public static Date stringToDate( String s )
170         {
171             Date r = null;
172             try {
173                 SimpleDateFormat fmt = new SimpleDateFormat( DATE_FORMAT );
174                 r = fmt.parse( s );
175             } catch ( ParseException e ){
176                 System.err.println( e );
177                 System.exit(1);
178             }
179             return r;
180         }
181     }
182
```