Homework\HW3\Date.java

```java
 1  /*
 2   * Lucas Carpenter
 3   * 2/21/2024
 4   * Lab #1
 5   * Class C201
 6   * GENNERAL DESCRIPTION: Date class holds date attributes that are manipulated, noteably
 7   * this class has a method that compares itself to other Date objects.
 8   */
 9  import java.util.Scanner;
10
11  public class Date {
12  // DESCRIPTION: this class has 6 methods including a main method and a toString method and 2
13  //                constructor methods. This class's purpose is to create a Date object
14  //                that contains the date, and methods to change this date and compare the
15  //                date. This class uses Scanner from java utilities.
16
17      // make variables(int) for day/month/year
18      int day;
19      int month;
20      int year;
21
22      public static void main(String[] args) {
23      // DESCRIPTION : main method, creates a date object(2/21/2024) and another empty date
24      //                object that is populated by the input method,  these objects are
25      //                printed to the terminal and then compared.
26          Date date = new Date(21, 2, 2024);   // make new Date object
27
28          Date newDate = new Date();                              // make a second Date object
29
30          System.out.println("Output date: " + date);         // output date
31
32          newDate.input();                                    // populate second date
33
34          System.out.println("Output newDate: " + newDate);   // output second date
35
36          System.out.println("Compare date to newDate: " + date.before(newDate));
37                                                              //Compare the 2 Date objects
38
39      }
40
41      public Date(int day, int month, int year) {
42      // DESCRIPTION: this constructor sets the attributes of this class
43      //                class attribute dd/mm/yyyy = actual parameters (day, month, year)
44          this.day = day;
45          this.month = month;
46          this.year = year;
47      }
48
49      public Date() {
50      // DESCRIPTION: this constructor sets the attributes of this class to 0
51          this.day = 0;
52          this.month = 0;
53          this.year = 0;
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 54          }
 55
 56      public void input() {
 57      // DESCRIPTION: designed to prompt the user with date input then set the day, month,
 58      //                       and year attributes of the Date object based on the user's input.
 59
 60          Scanner read = new Scanner(System.in);  // New Scanner object
 61
 62          System.out.println
 63          ("enter values for the three attributes(mm[ENTER]dd[ENTER]yyyy[ENTER]): ");
 64                                                 //Prompt the user for input
 65                                                 //  Tell them the format it may be accepted
 66
 67          this.month = read.nextInt();           // class attribute(month)   =   system.in
 68          this.day = read.nextInt();             // class attribute(day)     =   system.in
 69          this.year = read.nextInt();            // class attribute(year)    =   system.in
 70
 71          if (month > 12) {                      // month must be in range [1,12]
 72              month = 12;
 73          } else if (month < 1) {
 74              month = 1;
 75          }
 76
 77          if (day > 31) {                        // day must be in range [1,31]
 78              day = 31;
 79          } else if (day < 1) {
 80              day = 1;
 81          }
 82
 83          System.out.println(month + "/" + day + "/" + year);
 84                                                 // print out the new information
 85                                                 //  attributed to the class from the user
 86
 87          read.close();
 88      }
 89
 90      public boolean before(Date dateObject) {
 91      // DESCRIPTION: this method of type boolean returns if this object has the same date
 92      //                   as the parameter dateObject of type Date.
 93
 94          if (this.year == dateObject.year) {        // compare year
 95              if (this.month == dateObject.month) {   // compare month
 96                  if (this.day == dateObject.day) {   // compare day
 97                      return true;                    // check IF they are all
 98                                                      //  equal then return true
 99                  }
100              }
101          }
102          return false;                               // else return false
103      }
104
105      public String toString() {
106      // DESCRIPTION: this method turns the object into a string, printing out
107      //                   the attributes of the class. seperated by--> /
108          return (month + "/" + day + "/" + year);
109      }
```

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110 | }
```