```
/* SELF ASSESSMENT

 1. Did I use appropriate, easy-to-understand, meaningful CONSTANT names formatted correctly in UPPERCASE?

        Mark out of 5:        5
        Comment: All constant names were in upper case and had easy to understand constant names.

 2. Did I use easy-to-understand meaningful variable names formatted properly (in lowerCamelCase)?

        Mark out of 5: 5
        Comment:   All variable names were easy to understand and formated properly.

 3. Did I indent the code appropriately?

        Mark out of 5:  5
        Comment:        Yes. All indented properly

 4. Did I define the required functions correctly (names, parameters & return type) and invoke them correctly?

       Mark out of 20: 20
        Comment:  All function were defined appropriately.

 5. Did I implement the dayOfTheWeek function correctly and in a manner that can be understood?

       Mark out of 20: 20
        Comment:  The dayOfTheWeek function was implemented correctly and can be understood fine.

 6. Did I implement the other functions correctly, giving credit for any code that you take from elsewhere?

       Mark out of 20: 20
        Comment:  Other functions were implemented correctly.  I borrowed no functions for the code.

 7. Did I obtain (and process) the input from the user in the correct format (dd/mm/yyyy), and deal with any invalid input properly?
     Mark out of 10: 10
        Comment:        It takes the correct input from the user and deals with the invalid input properly.

 8. Does the program produce the output in the correct format (e.g. Monday, 25th December 2017)?

       Mark out of 10: 10
        Comment:          The output is in the correct format.

 9. How well did I complete this self-assessment?

        Mark out of 5: 5
        Comment:        I felt I completed the self-assessment to an appropriate level.

 Total Mark out of 100 (Add all the previous marks): 100

*/

import java.util.Scanner;

public class DayOfTheWeek {

        public static final int MONTHS_IN_YEAR = 12;
        public static final int DAYS_IN_FEBUARY_NO_LEAP_YEAR = 28;
        public static final int DAYS_IN_FEBUARY_IN_LEAP_YEAR = 29;


public static boolean isLeapYear ( int year)
        {
                if (year % 400 == 0)
                {
                        return true;
                }
                else if ( year % 100 == 0)
                {
                        return false;
                }
                else if ( year % 4 == 0)
                {
                        return true;
                }
                else
                {
                        return  false;
                }
        }

public static int daysInMonth ( int month, int year )
{
        int numberOfDaysInMonth = 31;
        boolean leapYear = isLeapYear( year );

        switch (month)
```

```
        {
        case 4:
        case 6:
        case 9:
        case 11:
                numberOfDaysInMonth = 30;
                break;
        case 2:
                if ( leapYear )
                {
                        numberOfDaysInMonth = DAYS_IN_FEBUARY_IN_LEAP_YEAR;
                }
                else
                {
                        numberOfDaysInMonth = DAYS_IN_FEBUARY_NO_LEAP_YEAR;
                }
                break;
                default:
        }


        return numberOfDaysInMonth;
}

public static boolean validDate (int day, int month , int year)
{
        if ( day < 0)
        {
                return false;
        }
        if ( day > daysInMonth( month, year ))
        {
                return false;
        }
        if ( month < 1)
        {
                return false;
        }
        else if (month > MONTHS_IN_YEAR)
        {
                return false;
        }
        return true;
}

public static String numberEnding ( int day )
{
        String dayEnding = "th";
        switch (day)
        {
        case 1:
        case 21:
        case 31:
                dayEnding = "st";
                break;
        case 2:
        case 22:
                dayEnding = "nd";
                break;
        case 3:
        case 23:
                dayEnding = "rd";
                break;
        default:

        }
        return dayEnding;
}

public static String monthName ( int month )
{
        String monthName = "December";
        switch (month)
        {
        case 1:
                monthName = "January";
                break;
        case 2:
                monthName = "Febuary";
                break;
        case 3:
                monthName = "March";
                break;
        case 4:
                monthName = "April";
                break;
        case 5:
```

```
                monthName = "May";
                break;
        case 6:
                monthName = "June";
                break;
        case 7:
                monthName = "July";
                break;
        case 8:
                monthName = "August";
                break;
        case 9:
                monthName = "September";
                break;
        case 10:
                monthName = "October";
                break;
        case 11:
                monthName = "November";
                break;
        default:


        }

return monthName;
}

public static final String dayOfTheWeek( int day, int month, int year )
{
        int firstTwoDidgetsOfTheYear = year / 100;
        int lastTwoDidgetsOfTheYear = year % 100;

        double dayOfTheWeekInNumericalForm = ( day + Math.floor( 2.6 * ((( month + 9 ) % 12) + 1)
        - 0.2 )+ lastTwoDidgetsOfTheYear + Math.floor ( lastTwoDidgetsOfTheYear / 4 )
        + Math.floor( firstTwoDidgetsOfTheYear / 4 ) - 2 * firstTwoDidgetsOfTheYear ) % 7;

        if ( dayOfTheWeekInNumericalForm < 0)
        {
                dayOfTheWeekInNumericalForm = dayOfTheWeekInNumericalForm + 7;
        }

        String dayOfTheWeek = "Sunday";

        switch ( (int) dayOfTheWeekInNumericalForm )
        {
                case 1:
                        dayOfTheWeek = "Monday";
                        break;
                case 2:
                        dayOfTheWeek = "Tuesday";
                        break;
                case 3:
                        dayOfTheWeek = "Wednesday";
                        break;
                case 4:
                        dayOfTheWeek = "Thursday";
                        break;
                case 5:
                        dayOfTheWeek = "Friday";
                        break;
                case 6:
                        dayOfTheWeek = "Saturday";
                        break;
                default:
                        break;
        }
        return dayOfTheWeek;
}

public static void main(String[] args) {


                Scanner input = new Scanner ( System.in );
                System.out.println("What is the current date? Please input in dd/mm/yyyy form.");
                input.useDelimiter("/|\r\n");
                int day = input.nextInt();
                int month = input.nextInt();
                int year = input.nextInt();

                input.close();

                boolean ifValidDate =validDate( day, month, year);

                if ( ifValidDate)
                {
                        String dayOfTheWeek = dayOfTheWeek ( day, month, year);
```

```
                String monthName = monthName ( month );
                String numberEnding = numberEnding ( day );

                System.out.println(dayOfTheWeek+", "
                +day+numberEnding+" "+monthName+" "+year);
            }
            else
            {
                System.out.println("The date you entered is not a valid date.");
            }
        }

}
```