Computer Science I   Java

Unit Two Assignment Four:

Write a Java project to compute the date of Easter Sunday.
Easter Sunday is the first Sunday after the first full moon
of spring. Use this algorithm, invented by the
mathematician Carl Friedrich Gauss in 1800.

  1. **Let y be the year (such as 1800 or 2006)**
  2. **Divide y by 19 and call the remainder a.**
  3. **Divide y by 100 to get a quotient b and a remainder c.**
  4. **Divide b by 4 to get a quotient d and a remainder e.**
  5. **Divide 8 * b + 13 by 25 to get a quotient g.**
  6. **Divide 19 * a + b - d - g + 15 by 30 to get a remainder h.**
  7. **Divide c by 4 to get a quotient j and a remainder k.**
  8. **Divide a + 11 * h by 319 to get a quotient m.**
  9. **Divide 2 * e + 2 * j - k - h + m + 32 by 7 to get a remainder r.**
  10. **Divide h - m + r + 90 by 25 to get a quotient n.**
  11. **Divide h - m + r + n + 19 by 32 to get a remainder p.**

  n is the number of the month and p is the day of that month.

This project should contain an EasterSunday class. It should have
two instance fields (int month, int day). It should
have one parametric constructor that receives the year as its only
argument and initializes the two instance fields using Gauss'
algorithm. This class should also have two accessor methods
getMonth() and getDay().

In the driver class (U2A3) you will construct a Scanner object to
retrieve the year to be tested from the console window.
Next you will construct an EasterSunday object using the year
retrieved from the console window. Using this object you will
retrieve the month and the day, as integers, of Easter Sunday in
the requested year. Next you will send the month, as an integer, to
the getMonthName method. This method retrieves a long String from
the text file U2A3.txt. This String contains the names of all 12
months each stored in a 9 character field. This method must retrieve
from this String the name of the month corresponding to the integer
sent to the method and return this String to the calling block.

Because the main method would have to call a method from within the
driver class, what you must do in the main method is to construct a
U2A3 object using a default constructor and place the rest of your
code in that default constructor.

You must execute this program twice, once for the year 2016 and once for the year 2017.

The output should look like this...

Enter the year: 2016
Easter Sunday is on March   27.

Enter the year: 2017
Easter Sunday is on April   16.