**Module 15**

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[**Final Project**](https://dmacc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_3812325_1&course_id=_69150_1&group_id=&mode=view)

According to [timeanddate.com](https://www.timeanddate.com/date/leapyear.html) a leap year is determined as follows.

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| In the Gregorian calendar three criteria must be taken into account to identify leap years:   * 1. The year can be evenly divided by 4;   2. If the year can be evenly divided by 100, it is NOT a leap year, unless;   3. The year is also evenly divisible by 400. Then it is a leap year. |

For the project make an application that determines if a year is a leap year.

* 1. The user will input a number and the program will determine if it is valid (our application only supports years between 0 and 9999).
  2. Loop until the user inputs a valid year.
  3. Determine if the year is a leap year.
  4. Output a message to the user if the year is a leap year or not.

Follow the programming design steps we have learned in class. Include the following in the submission:

* 1. A statement of the problem you are solving or real world process you are modeling
  2. Flowchart
  3. Psuedocode
  4. Test Data
  5. IPO Chart
  6. Java code with comments
  7. Example of the program running with input and output

Submit a doc or pdf file named **FinalProjectLastName.doc**(or **pdf**) with all components and attach a java file **FinalProjectLastName.java** as well.

**Hint 1:** Recall that input of numbers in Java can be performed as follows.

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| import java.util.Scanner;    public class Example {      public static void main(String[] args) {          Scanner scan = new Scanner(System.in);         int year;          year = scan.nextInt();     }  } |

**Hint 2:** In Java the remainder (aka modulus or mod for short) operator is %, for example:

* 1. 10 % 2 is 0 because 10 can be evenly divided by 2 (specifically 10 / 2 is 5 remainder 0).
  2. 9 % 2 is 1 because 9 / 2 is 4 remainder 1.

**Hint 3:** In Java the comparison operator to test equality is == (that is two equal signs). For example:

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| if (volume == 11) {  } |