

```
/**
 * Analyse une date pour vérifier si elle est correcte.
 *
 * Version de base, facile à comprendre - avec la méthode isValid().
 *
 * @author biech153 (Biersbach Chris) / gamca174 (Gamboa Carlos) / olial319 (Olinger Alex)
 * @version 07/02/2019 7:00:50
 * Classe: 3GIG
 */
public class AnalyseDate
{
    // La date "découpée" en ses trois parties
    private int day;
    private int month;
    private int year;

    public AnalyseDate(int pDay, int pMonth, int pYear)
    {
        day = pDay;
        month = pMonth;
        year = pYear;
    }

    public int getDay()
    {
        return day;
    }

    public int getMonth()
    {
        return month;
    }

    public int getYear()
    {
        return year;
    }

    public boolean isLeapYear()
    {
        boolean res = false;

        if (year % 4 == 0)
        {
            // année est divisible par 4
            if (year % 100 == 0)
            {
                // année divisble par 100
                if (year % 400 == 0)
                {
                    // année divisble par 400
                    res = true;
                }
                else
                {
                    // pas divisble par 400
                    res = false;
                }
            }
            else
            {
                // pas divisble par 100
                res = true;
            }
        }
        else
        {
            // pas divisible par 4
            res = false;
        }

        return res;
    }

    // ... suite page suivante ...
}
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```
public boolean isValid()
{
    boolean res = false;

    if ((year == 0) || (day < 1) || (day > 31) || (month < 1) || (month > 12))
    {
        res = false;
    }
    else
    {
        if ((day == 31) && ((month == 4) || (month == 6) || (month == 9) || (month == 11)))
        {
            res = false;
        }
        else
        {
            if (month == 2)
            {
                if (day >= 30)
                {
                    res = false;
                }
                else
                {
                    if (day == 29)
                    {
                        if (isLeapYear())
                        {
                            res = true;
                        }
                        else
                        {
                            res = false;
                        }
                    }
                    else
                    {
                        res = true;
                    }
                }
            }
            else
            {
                res = true;
            }
        }
    }

    return res;
}

public String toString()
{
    String res;

    if (isValid())
    {
        // date valide... sous forme 1er février 2019 / 2 mars 2018
        String ending = "";
        String mName = "";

        if (day == 1)
        {
            ending = "er";
        }

        if (month == 1)
        {
            mName = "janvier";
        }
        else
        {
            if (month == 2)
            {
                mName = "février";
            }
            else
            {
                if (month == 3)
                {
                    mName = "mars";
                }
            }
        }
    }
}
```

```
else
{
    if (month == 4)
    {
        mName = "avril";
    }
    else
    {
        if (month == 5)
        {
            mName = "mai";
        }
        else
        {
            if (month == 6)
            {
                mName = "juin";
            }
            else
            {
                if (month == 7)
                {
                    mName = "juillet";
                }
                else
                {
                    if (month == 8)
                    {
                        mName = "août";
                    }
                    else
                    {
                        if (month == 9)
                        {
                            mName = "septembre";
                        }
                        else
                        {
                            if (month == 10)
                            {
                                mName = "octobre";
                            }
                            else
                            {
                                if (month == 11)
                                {
                                    mName = "novembre";
                                }
                                else
                                {
                                    mName = "décembre";
                                }
                            }
                        }
                    }
                }
            }
        }
    }
}
// on construit la date
res = day+ending+" "+mName+" "+year;
}
else
{
    // indique une date invalide
    res = "-- --";
}

return res;
}
}
```

```

/**
 * Classe pour tester AnalyseDate.
 *
 * @author biech153 (Biersbach Chris) / gamca174 (Gamboa Carlos) / olial319 (Olinger Alex)
 * @version 07/02/2019 7:00:50
 * Classe: 3GIG
 */
public class TestAnalyseDate
{
    /**
     * Programme principal.
     */
    public static void main(String[] args)
    {
        AnalyseDate d;

        // Tester années bissextiles (année suffit, pas besoin de varier ni les jours ni les mois)
        d = new AnalyseDate(1, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" est bissextile: "+d.isLeapYear());
        d = new AnalyseDate(1, 1, 2000);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" est bissextile: "+d.isLeapYear());
        d = new AnalyseDate(1, 1, 2004);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" est bissextile: "+d.isLeapYear());
        d = new AnalyseDate(1, 1, 1900);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" est bissextile: "+d.isLeapYear());
        d = new AnalyseDate(1, 1, 1800);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" est bissextile: "+d.isLeapYear());
        d = new AnalyseDate(1, 1, 2015);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" est bissextile: "+d.isLeapYear());
        d = new AnalyseDate(1, 1, 2016);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" est bissextile: "+d.isLeapYear());

        System.out.println();
        System.out.println("----");
        System.out.println("JOURS valides / invalides");
        System.out.println();

        // Tester les jours invalides
        d = new AnalyseDate(-133, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(-1, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(0, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(1, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(31, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(32, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(45, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);

        System.out.println();
        System.out.println("----");
        System.out.println("MOIS valides / invalides");
        System.out.println();

        // Tester les mois invalides
        d = new AnalyseDate(1, -133, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(1, -1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(1, 0, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(1, 1, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(1, 12, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(1, 13, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
        d = new AnalyseDate(1, 25, 1987);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);

        System.out.println();
        System.out.println("----");
        System.out.println("ANNÉES valides / invalides");
        System.out.println();

        // Tester les années invalides
        d = new AnalyseDate(1, 1, -13443);
        System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
    }
}

```







```
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);

d = new AnalyseDate(28, 11, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(29, 11, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(30, 11, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(31, 11, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);

System.out.println();
System.out.println("DÉCEMBRE");
System.out.println();

d = new AnalyseDate(28, 12, 2004);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(29, 12, 2004);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(30, 12, 2004);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(31, 12, 2004);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);

d = new AnalyseDate(28, 12, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(29, 12, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(30, 12, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
d = new AnalyseDate(31, 12, 2013);
System.out.println("date "+d.getDay()+"."+d.getMonth()+"."+d.getYear()+" -> "+d);
}
```