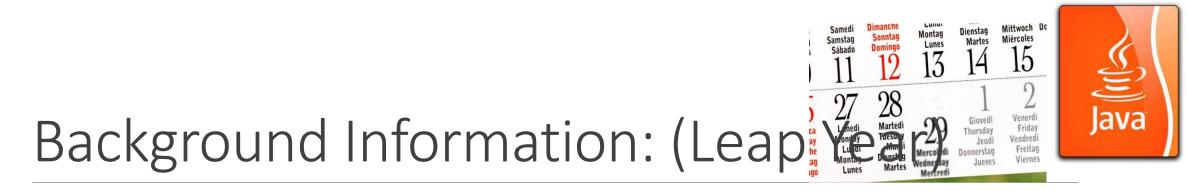# Java Programming AP Edition
U2C4 Decisions (Selections)

CALENDAR YEAR (LEAP YEAR AND CHINESE ZODIAC) LEAPYEAR.JAVA

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Background Information: (Leap Year)

Which Years are Leap Years?
In the Gregorian calendar 3 criteria must be taken into account to identify leap years:

• The year is evenly divisible by 4;
• If the year can be evenly divided by 100, it is NOT a leap year, unless;
• The year is also evenly divisible by 400. Then it is a leap year.

The year 2000 was somewhat special as it was the first instance when the third criterion was used in most parts of the world since the transition from the Julian to the Gregorian Calendar.

Background Information:
(Chinese Zodiac)

Jupiter goes around the sun every 11.87 years. (approximately 12 years.) Chinese call it **Planet of Years**. They use it to calculate for the Zodiac. Every 12 years is one rotation.

The year 1948 is year of Rat. The year 1950 is year of Tiger. The year 2015 is year of Sheep (sometimes also called goat/ram. Chinese believe they are in one category.)

If the year 2015 is 67 (2015-1948) years away from 1948 and 67 % 12 is 7, 7 years away from rat year is year of Sheep.

So, you may use y = (x-1948) % 12 to know that Year x is y years away from Rat year. Then, look up from the table.

| Year of the Rat | Year of the Ox | Year of the Tiger | Year of the Rabbit | Year of the Dragon | Year of the Snake |
| Year of the Horse | Year of the Sheep | Year of the Monkey | Year of the Rooster | Year of the Dog | Year of the Pig |

Lab: Calendar Year (LeapYear.java)

Write a program to ask the calendar year between 1948 and now, to determine 2 things:

(1) Is it a leap year?

(2) What Chinese Zodiac Year it is?

Then, Print out a Calendar Year Report with these information.

Expected Result:

1776 US. independence

454 fall of Rome

1   **1000**   **2000**   **3000**

```
Options
Enter a year: 1

It is not a leap year.
It is also a Rooster year !
```

```
Options
Enter a year: 1776

It is a leap year !
It is also a Monkey year !
```

```
Options
Enter a year: 2015

It is not a leap year.
It is also a Sheep year !
```

```
Options
Enter a year: 3000

It is not a leap year.
It is also a Monkey year !
```

```
Options
Enter a year: 454

It is not a leap year.
It is also a Horse year !
```

```
Options
Enter a year: 1800

It is not a leap year.
It is also a Monkey year !
```

```
Options
Enter a year: 2020

It is a leap year !
It is also a Rat year !
```

```
Options
Enter a year: 2000

It is a leap year !
It is also a Dragon year !
```

```
Options
Enter a year: 2016

It is a leap year !
It is also a Monkey year !
```