



Leap Year?

Leap Year Rule

There is a leap year every year whose number is perfectly divisible by four - except for years which are both divisible by 100 and not divisible by 400.

The second part of the rule effects century years. For example; the century years 1600 and 2000 are leap years, but the century years 1700, 1800, and 1900 are not.

Source: <https://www.wvu.edu/skywise/leapyear.html>

Solution

The following code prompts the user for a year between 1900 and 2200 and informs the user if the year is a leap year or not.

```
#include <iostream>
using namespace std;

int main(int argc, char** argv)
{
    int year;
    bool isLeap;

    // Prompt the user for a year. Repeat until a valid year is entered.
    do
    {
        cout << "Please enter a year (1900 to 2200): ";
        cin >> year;
    }
    while(year < 1900 || year > 2200);

    // Assume year is not a leap year.
    isLeap = false;

    // If year is divisible by 4, it is a leap year
    if(year%4 == 0)
    {
        isLeap = true;
    }

    // If year is divisible by 100, it is not a leap year
    if(year%100 == 0)
    {
        isLeap = false;
    }

    // If year is divisible by 400, it is a leap year
    if(year%400 == 0)
    {
        isLeap = true;
    }

    if(isLeap == true)
    {
        cout << "\nThat is a leap year.\n";
    }
    else
    {
        cout << "\nThat is not a leap year.\n";
    }

    return 0;
}
```