

In the Gregorian calendar, a normal year consists of 365 days. Because the actual length of a sidereal year (the time required for the Earth to revolve once about the Sun) is actually 365.25635 days, a "leap year" of 366 days is used once every four years to eliminate the error caused by three normal (but short) years. Any year that is evenly divisible by 4 is a leap year: for example, 1988, 1992, and 1996 are leap years.

However, there is still a small error that must be accounted for. To eliminate this error, the Gregorian calendar stipulates that a year that is evenly divisible by 100 (for example, 1900) is a leap year only if it is also evenly divisible by 400.

For this reason, the following years are not leap years:

1700, 1800, 1900, 2100, 2200, 2300, 2500, 2600

This is because they are evenly divisible by 100 but not by 400.

The following years are leap years:

1600, 2000, 2400

This is because they are evenly divisible by both 100 and 400.

## How to determine whether a year is a leap year

A year is a leap year if

1. If the year is evenly divisible by 400, or
2. If the year is evenly divisible by 4 but not divisible by 100,

## Determination of the day of the week

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```
// get_day_code returns the day on which January
// 1 of the specified year begins. The return
// value is coded as: 0 is Sunday, 1 is Monday,
// and so on.
int get_day_code( int year ) {
    return ( year + ( year - 1 ) / 4 - ( year - 1 ) / 100
           + ( year - 1 ) / 400 ) % 7;
}
```