

Briefly About System.DateTime Namespace

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Introduction

The .Net framework provides two value types for Date and Time in System namespace. They are

1. System.DateTime
2. System.TimeSpan

The DateTime value type has Dates with a range of 10000 years (12:00:00 midnight, January 1, 0001 AD to 11:59:59 P.M., December 31, 9999 A.D.) and a Time with a resolution of 100 nano second (Ticks).

The TimeSpan value represents a period of time and is expressed as a number of ticks (A Tick is 100 nano seconds).

What is the relation between DateTime and TimeSpan?

It is very simple the difference between two DateTime values is expressed in a TimeSpan.

DateTime

Before using DateTime you have to create an instance of it, it mainly contains 4 constructors (although total 7 constructors, but 3 are duplicates). The constructors allow you to initialize DateTime structure.

Eg:

```
DateTime today = new DateTime(2006,5,11,4,15,20);
```

we can convert DateTime value to string.

```
string date = today.ToString();
```

Some common methods of the DateTime structure are: Add, AddDays, AddHours, AddMinutes, AddMonths, AddSeconds, AddYears, DaysInMonth along with the various permutations of the ToString() overload for DateTime.

TimeSpan

Suppose your date of Birth is 24th October 1983, 7:15:00 Am now you want to find your age exactly i.e. difference between your date of birth and today, how you will get?

As we discussed earlier the difference between two dates is TimeSpan, which is the relation between TimeSpan and DateTime.

See the following example, it will give your current age if you give your date of birth as

parameters.

```
DateTime birthday = new DateTime(1983,10,24,7,15,00);
```

```
DateTime today = DateTime.Now;
```

```
TimeSpan age = today - birthday;
```

```
Label1.Text = age.ToString();
```

Similarly we can also calculate TimeSpan between two times.

Let us see some examples of how to display dates in various formats using ToString()

```
DateTime.Now;                    5/16/2006 1:05:13 AM
DateTime.Now.ToString();         5/16/2006 1:05:13 AM
DateTime.Now.ToShortTimeString() 11:40 AM
DateTime.Now.ToShortDateString() 5/16/2006
DateTime.Now.ToLongTimeString()  11:40:13 AM
DateTime.Now.ToLongDateString()   Tuesday, May 16, 2006
```

Examples of DateTime for Given Formats

```
DateTime.Now.ToString("dddd, MMMM dd yyyy") - Tuesday, May 16 2006
DateTime.Now.ToString("ddd, MMM d \"\"yy") - Tue, May 16 '06
DateTime.Now.ToString("dddd, MMMM dd") - Tuesday, May 16
DateTime.Now.ToString("M/yy") - 5/06
DateTime.Now.ToString("dd-MM-yy") - 16-05-06
```

Summary

In this article we saw various Formats of Dates in System.DateTime and also learned about TimeSpan

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