

Solutions to Common Date & Time Scenarios in .NET



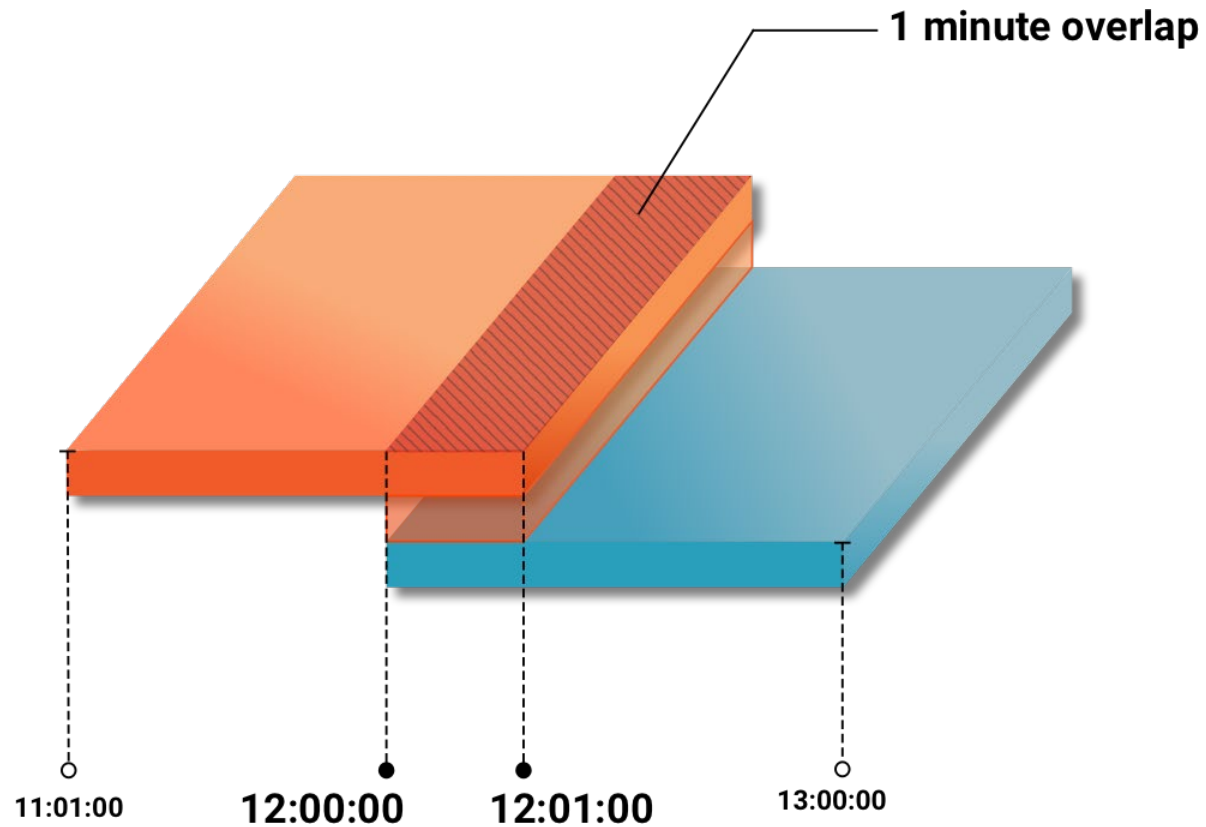
Filip Ekberg

PRINCIPAL CONSULTANT & CEO

@fekberg fekberg.com



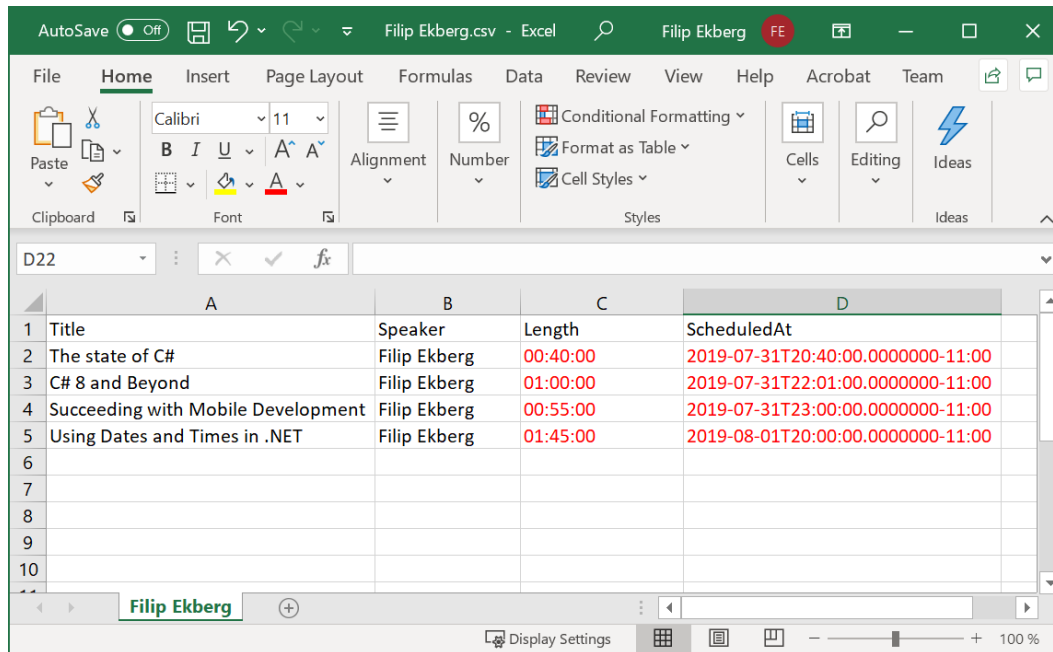
Identify Overlapping Times



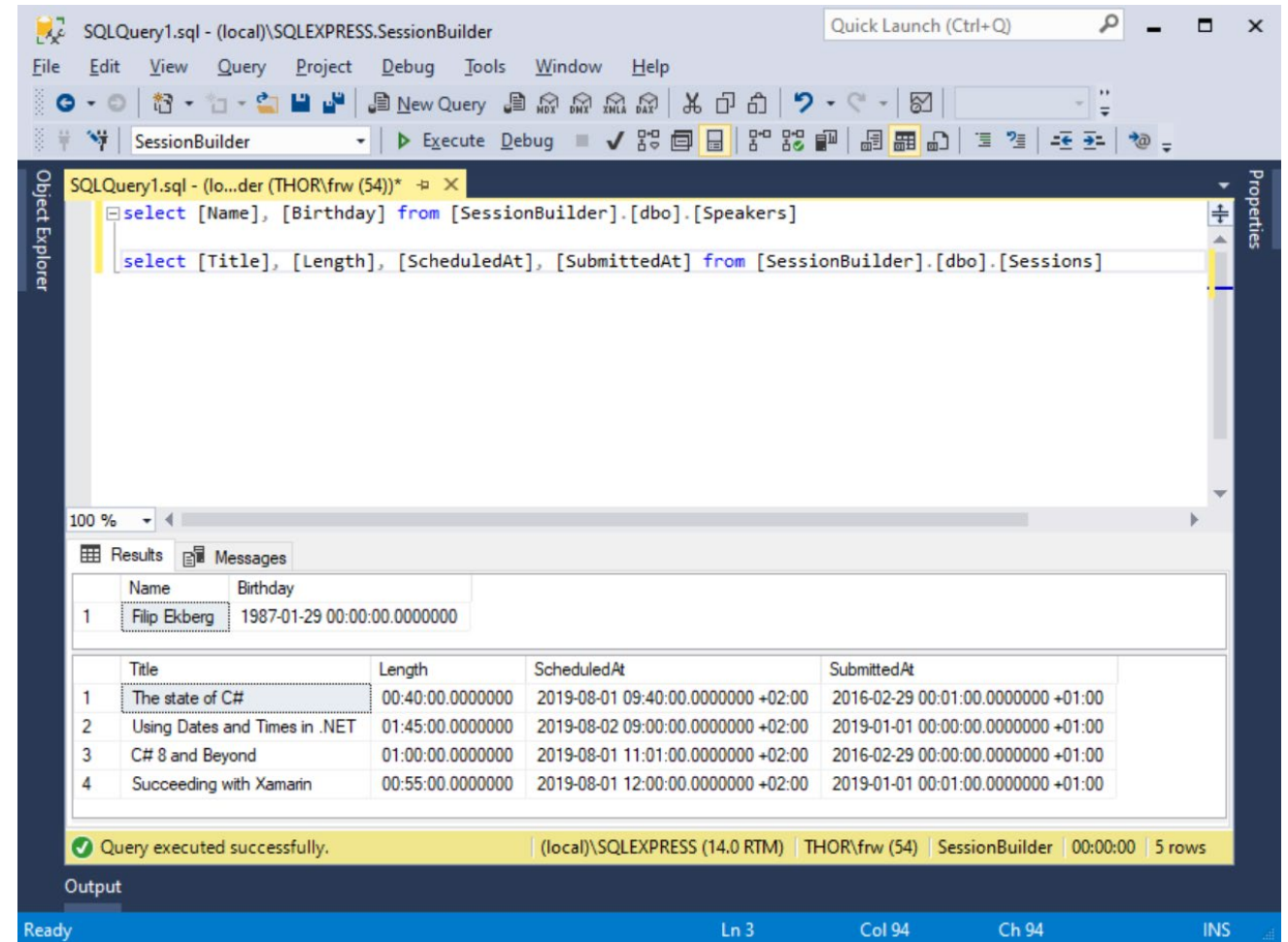
Relative Time



Storing Dates and Times



	A	B	C	D
1	Title	Speaker	Length	ScheduledAt
2	The state of C#	Filip Ekberg	00:40:00	2019-07-31T20:40:00.0000000-11:00
3	C# 8 and Beyond	Filip Ekberg	01:00:00	2019-07-31T22:01:00.0000000-11:00
4	Succeeding with Mobile Development	Filip Ekberg	00:55:00	2019-07-31T23:00:00.0000000-11:00
5	Using Dates and Times in .NET	Filip Ekberg	01:45:00	2019-08-01T20:00:00.0000000-11:00
6				
7				
8				
9				
10				



```
select [Name], [Birthday] from [SessionBuilder].[dbo].[Speakers]

select [Title], [Length], [ScheduledAt], [SubmittedAt] from [SessionBuilder].[dbo].[Sessions]
```

	Name	Birthday
1	Filip Ekberg	1987-01-29 00:00:00.0000000

	Title	Length	ScheduledAt	SubmittedAt
1	The state of C#	00:40:00.0000000	2019-08-01 09:40:00.0000000 +02:00	2016-02-29 00:01:00.0000000 +01:00
2	Using Dates and Times in .NET	01:45:00.0000000	2019-08-02 09:00:00.0000000 +02:00	2019-01-01 00:00:00.0000000 +01:00
3	C# 8 and Beyond	01:00:00.0000000	2019-08-01 11:01:00.0000000 +02:00	2016-02-29 00:00:00.0000000 +01:00
4	Succeeding with Xamarin	00:55:00.0000000	2019-08-01 12:00:00.0000000 +02:00	2019-01-01 00:01:00.0000000 +01:00

Query executed successfully. | (local)\SQLEXPRESS (14.0 RTM) | THOR\frw (54) | SessionBuilder | 00:00:00 | 5 rows



Unix Timestamp

1562335678

(2019-07-05T14:07:58.00000000Z)



Try to implement on your
own



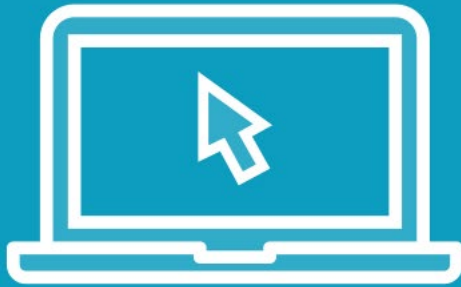
Demo



Identifying Overlapping Dates & Times



Demo



Relative Time: How long ago? Are we there yet? Earlier/Later?



Calculating Relative Time

10:45 - 10:20

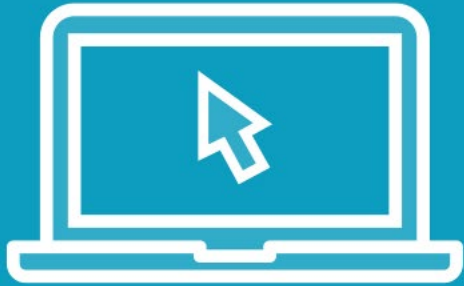
TimeSpan representing 25 minutes

10:20 - 10:45

TimeSpan representing -25 minutes



Demo



Working with Birthdays



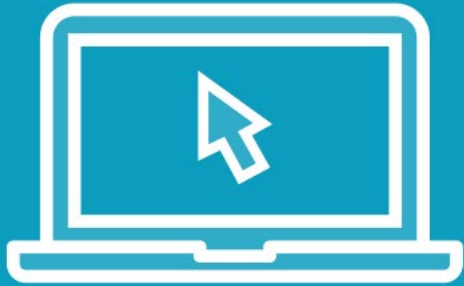
Supporting Leap Years

**2019-02-01 + 28 =
March 1st 2019**

**2020-02-01 + 28 =
February 29th 2020**



Demo



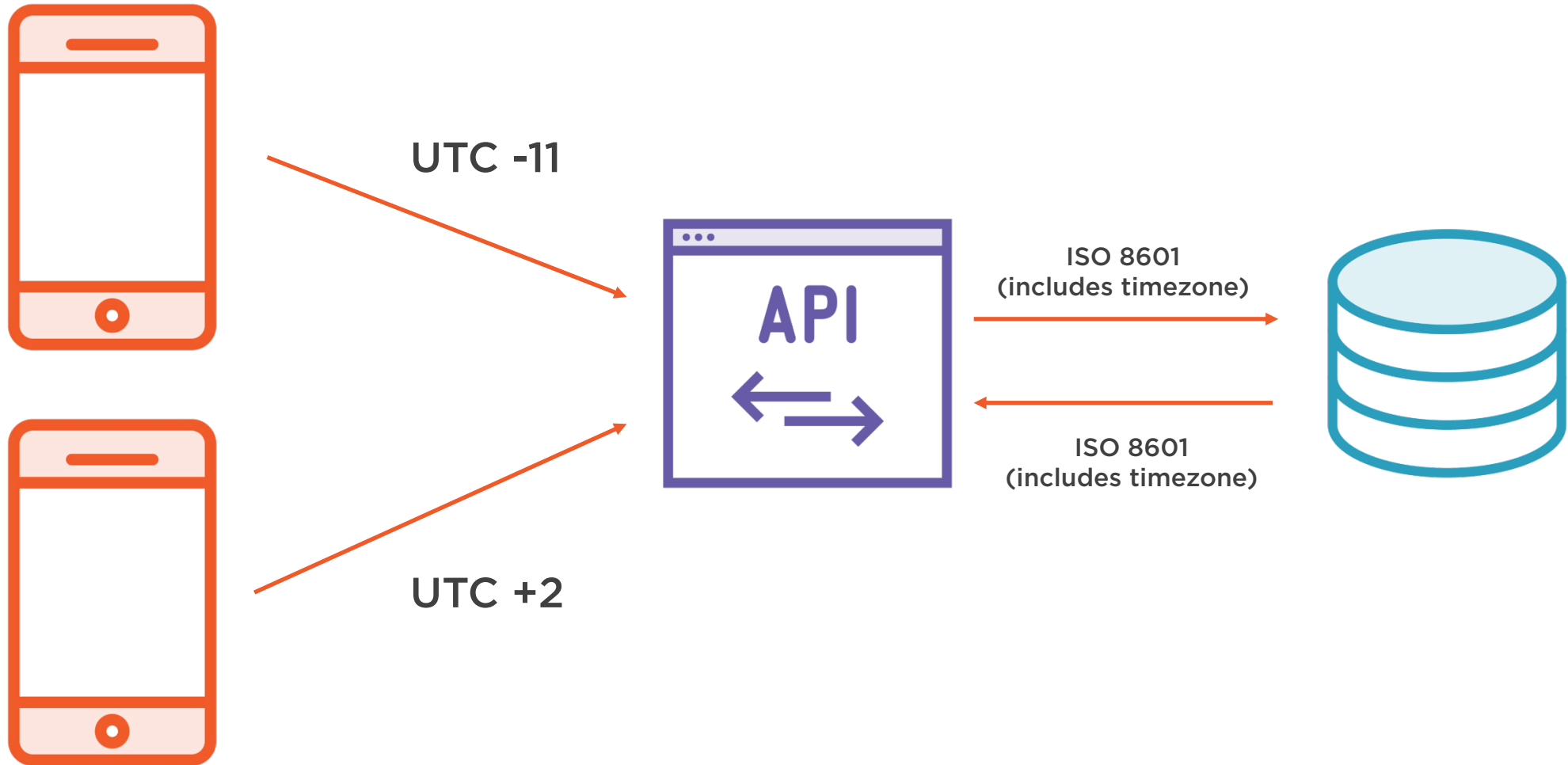
Storing Dates and Times in Files



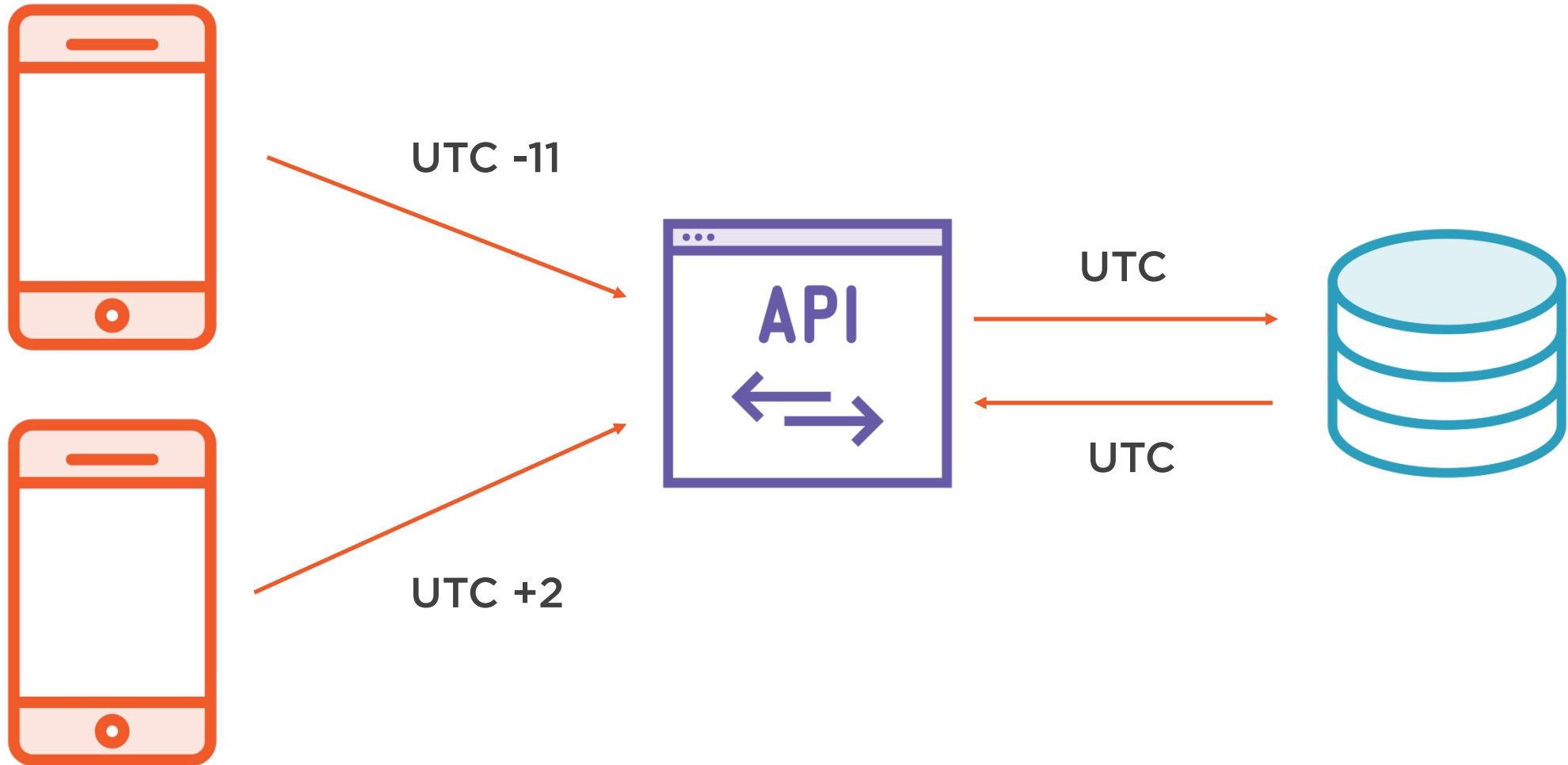
Aim to use `DateTimeOffset`
over `DateTime`



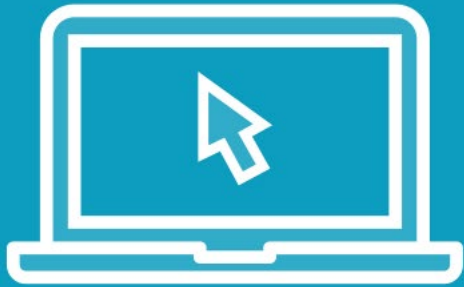
Storing Dates and Times in Files



Storing Dates and Times in Files



Demo



Storing Dates and Times in SQL Server



Choose the appropriate
data type for your scenario



Persistent Storage Tips

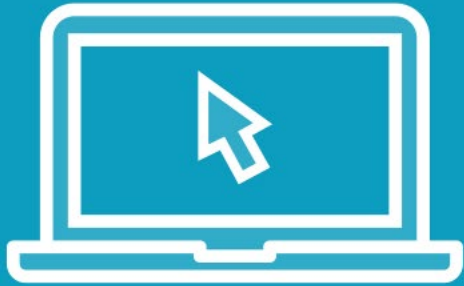
Does it support
DateTimeOffset
or similar?

Store the time
zone separately?

Always assume
DateTime is UTC!



Demo



Unix Timestamp



Unix Timestamp

Elapsed seconds since **January 1st, 1970 (UTC)**



Summary



Solutions to common date & time scenarios

Calculating elapsed time, remaining time and working with relative time

How to identify overlapping dates & times

Comparing different dates & times

Handling leap days and leap years

Storing dates

Best practices



Thank you!

