## Ambiguous time (or 2009.10.25 2:30 it is actually when?)

Homer is working on the nuclear power station. He is responsible for the cooling of the reactor. Reactor must be cooled every night from 2:30 till 3:45. This is highly important to cool the reactor exactly 75 mins because of security reasons otherwise it can freeze or explode. Homer is using Release Calendar together with Nilex Plus. He has created a release window “Cool down the main reactor” and with appropriate start and stop time. However because of daylight saving time local time will be changed at 3:00 back to 2:00. This means reactor will be cooled down for 135 minutes…

It could be even worth because 2009.10.25 2:30 (local time) is happens twice. So theoretically the cooling procedure could be started twice that day.

Question: what will gonna happen in Springfield at 28 of March? ☺

## Sort by dates

If in the same database column time will be stored in different time zones then database sort function will work in incorrect way. This automatically means it will be impossible to use database cursors or any alternative method for paging implementation.

## Time zone storing convention

It also could be an issue. For now there are about 60 known time zones and AFAIK no common standard how to present time zone as in a binary or string value. Storing time zone as a time shift (like UTC+2 or UTC-3) is not a correct way because time shift from UTC to local time could be different at winter and summer time.

Another way is use some kind of enumeration. But this is also dangerous idea because the number of Time zones depends from political situation.

The most stable way is to assign a GUID for every Time Zone and use it. However don’t you think it could be not very convenient for the end user :)

## Select by date

How to find all the RC windows by a time interval?

For example we have a search dialog where user needs to specify 2 dates (“from” and “to”).

In case of UTC it’s quite a simple.

1. select \* from RC\_WINDOW where StartTime > localToUTC(timefrom) and EndDate < localToUTC(timeto)
2. for each found record convert time from UTC to local.

And now think how to write such method in case when we store time as local time and a time zone…

## Operations

One of the advantages of UTC is the simple way of its comparing and calculation of length. We always know that if DateA is lower than DateB then event B was happed after event A. The same with the time interval if we subtract DateA from DateB we will get exactly the time interval.

Those things do not depend from the Winter of Summer time or a local time zone.

In case of local time we always must these two parameters and sometimes we even can’t calculate correct time interval.

## “Developers”

If you are really cares about customer’s “developers” who potentially will work with our tables and who don’t know about UTC. We can create a special stored procedure for creation of RCWindow using local time and time zone. Also we could create special view(s) what will return date time at local format. But I thinkthis is useless because IMHO chance to confuse the time zone if higher comparing with change to confuse local time with UTC.

Interesting fact: POSIX time function or Windows GetSystemTime returns time in UTC…