

# Date and time on the visualization

In this tutorial we show how to display the current date and time on the visualization as well as different ways of formatting.

## 1. Clock update

We will start from a small portion of Lua code, that will allow us to obtain the current date and save it in a VAR variable.

```
function clock()  
    set('VAR.clock',date())  
end
```

The `clock` function invokes the Lua function- `date`. It returns the current date and time and saves the `clk` variable using the `set` function.

Date and time are displayed in the default format and should have the following form:

<day name> <month name> <day> <hour>:<minute>:<second> <year>, e.g.:  
*Wed Nov 7 14:50:00 2012.*

## 2. Starting the clock

The code mentioned in section 1. does not perform any action until the `clock()` function is invoked. In order to get the time and date automatically updated, create a timer that will periodically invoke the `clock()` function. We will use `timer`.

1. Add a new timer in **Timers** tab. You can add the description, e.g. „*Clock*” (optional).
2. In **Seconds** field enter `0`. The timer will be invoked every minute.
3. Click on **Add command**, in order to define the `clock()` function. In the displayed window in the **Name** field enter `C.LOGIC` and in the **Value** field enter: `clock()`.

Szczegóły	
Aktywny	<input checked="" type="checkbox"/>
Opis	zegar
Miesiąc	
Dzień	
Godzina	
Minuta	
Sekunda	0
Dzień tygodnia	
Warunek	
Akcje	
CHANNEL name=C.LOGIC value=clock() binary=false	
Usuń...	

From now on the clock will be updated every minute automatically.

## 3. Effect on the visualization

In order to see the effect on the visualization, add the element like **Text** and in the **Channel** field enter the name of the VAR variable in which the date and time is saved. In this case it is `VAR.clock` variable.

## 4. Date and time formatting

In this section we present the ways of formatting the date and time. The following table lists all the available parameters that can be used to format dates and times. Examples relate to the date of the 07.11.2012 (Wednesday) at 15:10:35. All parameters can be used with the `date` function mentioned above.

Parameter	Description	Example
<code>%a</code>	Short name of the day	<i>Wed</i>
<code>%A</code>	Full name of the day	<i>Wednesday</i>
<code>%b</code>	Short name of the month	<i>Nov</i>
<code>%B</code>	Full name of the month	<i>November</i>
<code>%c</code>	Date and time – default format	<i>Wed Nov 7 15:26:16 2012</i>
<code>%d</code>	Number of the day of the month	<i>07</i>
<code>%H</code>	Hour, (24-hour-format)	<i>15</i>
<code>%I</code>	Hour (12-hour-format)	<i>03</i>
<code>%M</code>	Minute	<i>10</i>
<code>%m</code>	Month	<i>11</i>
<code>%p</code>	Time of the day (PM or AM)	<i>PM</i>
<code>%S</code>	Second	<i>35</i>
<code>%w</code>	Day of the week (0 = Sunday, 6=Saturday)	<i>3</i>
<code>%x</code>	Date	<i>07/11/12</i>
<code>%X</code>	Time	<i>15:10:35</i>
<code>%Y</code>	Year (full figure)	<i>2012</i>
<code>%y</code>	Year (two digits)	<i>12</i>

If the `date` function is invoked without any parameter (like in code from chapter 1, the `%c` parameter is used by default.

### 4.1. Usage

Below we present some examples of date and time formatting which can be used in the code from the first section of the tutorial.

Function with formatting	Result
<code>date("%d-%m-%Y, %H:%M")</code>	<i>07-11-2012, 15:10</i>
<code>date("Today it is: %d/%m/%Y, %H:%M")</code>	<i>Today it is: 07/11/2012, 15:10</i>
<code>date("%A %d. %B %Y, %H:%M")</code>	<i>Wednesday 07. November 2012, 15:55</i>
<code>date("%H:%M")</code>	<i>15:10</i>