



# The T<sub>E</sub>X Clock 0.3

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## 1 Graphical Clocks

The T<sub>E</sub>X clock is a small hack<sup>1</sup> for those who desire to show the time in a graphical fashion. The basic command available is `\clock{. .}{. .}` which takes two arguments: hours and minutes. It does not matter whether the hours are given in a 12h or a 24h range; the T<sub>E</sub>X clock understands both.

When saying `\clocktime` (without any argument) then the T<sub>E</sub>X clock will output the current system time at time of compilation in graphical manner:

A random time: 

The compilation time: 

A random time: `\clock{13}{47}\`

The compilation time: `\clocktime`

## 2 Installation

Before, however, we go into the details of the T<sub>E</sub>X clock, some notes on the installation of this software package. The installation procedure depends on the nature of the actual T<sub>E</sub>X system. The directory tree of e. g., teTeX is different from the emTeX tree; hence the source archive `clock.zip` features the following subdirectories the contents of which has to be placed into appropriate branches of the T<sub>E</sub>X installation:

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<sup>1</sup>The T<sub>E</sub>X clock was inspired by a discussion on `comp.text.tex` somewhen in spring 2001; special thanks to Daniel Luecking for the detection of spurious spaces.

- `mfont` holds the Metafont source file for the clock. The suggested path for `emtex` users is `\emtex\mfont\clock`; for `teTeX` users `$TEXMF/fonts/source/public/clock` is a suitable choice.
- `tfm` holds the font metrics file. The suggested path for `emtex` users is `\emtex\tfm\clock`; for `teTeX` users `$TEXMF/fonts/tfm/public/clock` is a suitable choice.
- `texinput` holds the style files which are read by `TeX` and `LATeX 2ε`. The suggested path for `emtex` users is `\emtex\texinput\clock`; for `teTeX` users `$TEXMF/tex/latex/clock` is a suitable choice.
- `doc` contains the documentation (the document which you are reading right now). It can be placed in `\emtex\doc\clock` (for `emtex` users) or `$TEXMF/doc/latex/clock` (for `teTeX` users).

It may become necessary to rehash the directory database of the `TeX` system. When in doubt, consult your system administrator or local `TeX` wizard. On `teTeX` systems, the command `texhash` will perform this service.

### 3 Activating the `TeX` clock

In order to access the features of this little clock, `TeX` users put `\input\clock` near the beginning of their document, while `LATeX 2ε` users say `\usepackage{clock}` in the preamble of their document. There are no options for the `TeX` clock.

### 4 Clock Styles

The appearance of the clock is controlled by two style parameters. `\ClockFrame` is a Boolean parameter and can be `true` or `false`. Saying `\ClockFramefalse` lets the border disappear, saying `\ClockFrame>true` lets the border appear.

The parameter `ClockStyle` takes a number between 0 and 3 where 0 stands for a clock with invisible dial:

<code>\Clockstyle=n</code>	With Border	Without Border
0		
1		
2		
3		

When used with  $\LaTeX$ 2e, the size of the clock will automatically adapt to the text environment, but if the user so desires, deviating sizes can be selected with the usual font size commands.

## 5 The Text Clock

A graphical clock is not always ideal, sometimes a simple four-digit digital display is more useful. For this purpose, the  $\TeX$  clock provides a text-style clock. Saying `\texttime` shows the system time at the time of compilation in a colon-separated 24 hour format. Of course, the hours of the day are available as `\texthours`, and the minutes can be accessed by saying `\textminutes`

The compilation time is: 17:30  
 Minute 30 of the hour  
 Hour 17 of the day

```
The compilation time is: \texttime\  

Minute \textminutes\ of the hour\  

Hour \texthours\ of the day\  


```

## 6 The $\TeX$ clockwork

The inner workings of the  $\TeX$  clock are of astonishing simplicity. Sixty different minute hands and the same number of hour hands are stored as characters, and for any given minute `\minute` the appropriate minute hand is selected like `\char\minute`. While the time of minutes translates directly into the minute hand escapement, the escapement of the hour hand has to be augmented by tiny steps calculated from the minutes in order to create a natural, clock-like look as the hour hand stands more often than not between full hours. The border and the various dials are stored as individual characters which then can be added to the display of the clock as desired.