

The `sesstime` Package

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<https://ctan.org/pkg/sesstime>

<https://github.com/nbeisert/latex-pkg-nb>

Abstract

`sesstime` is a $\text{\LaTeX 2}_{\epsilon}$ package to add timing marks to lecture notes in order to help managing the time available for presenting a given section of the document. It also provides tools to record and estimate the progress throughout the course.

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1 Introduction

A crucial step in designing a lecture course is to estimate the time needed for presenting the individual topics and to arrange them such that the overall teaching goals can be achieved within a predetermined amount of time. This step requires a lot of experience and the information is typically lost when (parts of) the lecture notes are recycled by different lecturer. While it is very useful to have timing information available for a number of purposes, it also takes patience and dedication to set it up and to keep it up to date when the presented material is changed (added, removed or shuffled).

This package offers an interface to store such timing information in the L^AT_EX source. It also offers some tools to process the raw data and display them in compiled form. The goals and features of this package include the following:

- Store timing information in the L^AT_EX source (as absolute or relative times).
- Show small timing marks in the margin of the text.
- Indicate where sessions begin and end in the L^AT_EX source and display session information in the text margin.
- Show the total time needed to present a given block, chapter or session at its start.
- Generate a table of sessions to track and estimate the progress throughout the course.
- Show brief comments regarding presentation, e.g. to skip certain parts or to pay particular attention.
- Maintain timing information in updates as conveniently as possible.
- Automatically generate the subdivision of sessions (based on the timing information provided).

2 Usage

This section describes the structures, markup and mechanisms provided by the package and some hints how to structure and maintain the information within the document. A complete reference of commands and configuration options is given in section 3.

To use the package `sesstime` add the command

```
\usepackage{sesstime}
```

to the preamble of your L^AT_EX document.

2.1 Blocks

The basic timing information is entered in a unit called *block*. It has the following generic structure:

```

\timingstart{15}
abc
def
\timingsplit{30}
ghi
jkl
\timingsplit{40}
mno
pqr
\timingstop{1:00}

```

The above timing information is provided as absolute times (in [hours:]minutes), such that the block begins at 15 minutes and ends at 1 hour. It thus takes 45 minutes in total to present this block. Furthermore, two intermediate times are specified at 15 minutes and 25 minutes into the block (albeit in the form of absolute times). The timing information for the block will be displayed as:

90	abc
45 ↓	def
15 ↓	ghi
	jkl
25 ↓	mno
45 ↑	pqr
135	

Note that the displayed times are always relative to the block beginning. The bold numbers show the overall time outside the block (assuming that this block starts at 90 minutes). Furthermore, note that two \LaTeX passes are needed to display all data correctly (as for labels).

Alternatively, the information can be entered as relative times with respect to the previous timing command:

```

\timingstart*{0}
...
\timingsplit*{15}
...
\timingsplit*{10}
...
\timingstop*{20}

```

This markup has the same effect as the above timing commands using absolute times. There are some benefits and shortcomings to the two modes of entering the information, and the choice is left to the user. Note that relative and absolute times can be mixed (one absolute reference point should be specified previously).

Some remarks and considerations are in order for setting up timing blocks and maintaining them when changing the presented material:

- If the duration of some presented material is estimated, it makes sense to specify relative times.
- If the duration is determined by periodically noting the present time displayed on a clock, it makes sense to specify these absolute times directly.
- When absolute times are specified, the duration of a block is determined by the final `\timingstop` (only). Split times given by `\timingsplit[*]` do not change the overall

length. In order to change the duration of a block when some presented material is added or removed, all subsequent absolute times have to be adjusted. Alternatively, additional time can be specified by:

```
\timinglapse{5}
```

This command conveniently adds 5 minutes to the block without modifying the current absolute time. When using relative times throughout the block, this has the same effect as `\timingsplit*{5}`.

2.2 Chapters

The package provides an additional layer of structure called *chapters*. A chapter combines several blocks in order to display the overall required time as well as relative times within the chapter.

A chapter is enclosed by two commands

```
\timingchapter
abc
def
ghi
\timingchapterend
```

Closing a chapter is optional, it will be closed automatically by starting any subsequent chapter.

There are three uses to declaring chapters. The total time for presenting the chapter is computed and it is displayed at the start:

```
180 *|abc
    |def
    |ghi
```

Furthermore, the bold numbers shown in the above examples for blocks indicate the present time relative to the beginning of the chapter. Finally, one can also show the total time needed for any chapter anywhere within the document, e.g. for a customised table of contents or next to the chapter title in a customised form.

It will be useful to match the chapters and blocks to certain structures in the document. For example, chapters could correspond to chapters or sections depending on which document-class is used. If the `\include` mechanism of L^AT_EX is used to structure the document into several files, it makes sense to use these units as chapters for timing purposes. Blocks would typically correspond to the next level of structure (sections or subsections, respectively) and split times could be inserted naturally at any finer levels of structure (subsubsections, paragraphs).

Establishing some guidelines how to entering timing information will be useful because the package will then compute the total durations of these structures and display the times at their beginnings.

For maintenance purposes, a typical block could last around 30 minutes to an hour and be split at no more than a handful instances; more split times will take more efforts in maintaining across updates. There is no practical limitation to the length of individual chapters as times are computed automatically; typically it would consist of a couple of blocks.

2.3 Sessions

Chapters will normally not map one-to-one to the units of presentation (individual lectures) which we shall call *sessions*. It may be useful to keep track or estimate where each session will start (or end). There are two mechanisms to specify sessions. The manual declaration takes the form:

```
\timingsession
abc
def
ghi
\timingsessionend
```

Again, closing a session is optional, it will be closed automatically by starting any subsequent session. Alternatively, the subdivision of sessions can be automatically estimated by the command:

```
\timingconfigure{autosession=duration}
```

This declares the duration of a session to be *duration* minutes. New sessions will be started automatically when the available time for the previous session has elapsed (as far as possible with the timing information provided).

Sessions have two uses. The start of a session is indicated in the margin together with its duration:

abc	<div>session 4 (35 min)</div>
def	
ghi	

Furthermore, a list of sessions can be displayed by the command:

```
\timinglistofsessions
```

The list of sessions can serve two purposes in planning a lecture course. First, it outlines the (approximate) overall schedule and allows one to find out conveniently whether there will be sufficiently many sessions to cover the intended material. Second, the preview can help coordinating the topics for exercises to accompany the course.

Note that the automatic assignment of sessions relies on the timing information provided in the blocks. On the one hand, the latter should be sufficiently fine-grained so that the session breaks can be located accurately. On the other hand, it will not be worth the effort to establish too detailed information. Providing one timing mark for around one third of the duration of a session will produce reasonable results. In the case of coarse-grained information, new sessions will be triggered such that the overall schedule remains approximately valid. The session marks will then be displayed some time after the session is expected to start, and the time difference is displayed.

Note also that the list of sessions and total times rely on information stored in the `.aux` files. In order to update the information, it may be necessary to compile the complete document (without `\includeonly` statements) twice.

Finally, it may be useful to emphasise that session marks can also be displayed without providing timing information. In that case, the subdivision of session evidently cannot be generated automatically, but must be stored manually.

2.4 Comments

Occasionally it is useful to write some brief comments or instructions in the margin of lecture notes. While there are native L^AT_EX tools to do so, the package provides an integrated mechanism:

`\timingcomment{comment}`

Such comments can serve many purposes, such as:

- ‘skipped’: The following part is skipped in the presentation.
- ‘brief!’: Be brief! Do not waste time!
- ‘explain!’: Explain well! Take your time!
- ‘exercise’: Hint at an accompanying exercise.
- ...

skipped

brief!

explain!

exercise

2.5 Flags

The package allows to specify flags to distinguish different versions of the document or to set it up for different purposes (e.g. a particular iteration of the lecture course or lecture notes vs. textbook):

`\timingconfigure{flags={flags}}`

Here *flags* is a comma-separated list of user-defined flags. Please avoid special characters and spaces (spaces next to comma separators are presently not ignored).

Most timing commands provided by the package accept an optional argument which can be `[if=flag]` or `[not=flag]` (or combinations of these separated by comma). These commands will be processed only if the specified condition(s) hold. For example, the commands

`\timingcomment[if=2017]{skip}`
`\timinglapse[if=2017]{-10}`

can be used to indicate that the following part of the text is skipped in the 2017 iteration of the lecture course, and 10 minutes are saved by this omission.

2.6 Printing

Detailed timing information or comments may be intended for private purposes only, while these marks should be stripped in a public version of the document. The package supplies some global options to enable and disable the printing of timing marks. To turn off all marks, use the package option:

`\timingconfigure{print=false}`

Also individual types of timing marks can be suppressed by similar package options, see section 3.6. For a finer selection or suppression of comments, one could use an optional argument such as `[if=private]` (only in the private version) or `[not=public]` (only in the public version), see section 2.5.

Please note that the package uses a simple mechanism to place timing marks and comments in the margin next to the current location. This mechanism requires T_EX to be in so-called vertical mode (loosely speaking the space between paragraphs); marks cannot be set

in horizontal mode (text within the paragraphs). As timing marks are naturally placed between the paragraphs and to avoid complications, a paragraph is automatically broken when a timing mark is placed in horizontal mode. This has the effect of splitting the current paragraph in two or occasionally inserting some extra vertical space between paragraphs. Note that this applies only if timing marks are actually printed, otherwise the structure of paragraphs is left untouched.

Relatedly, it makes no sense to place timing marks *after* a (sub)paragraph command which enforces horizontal mode to stay on the same line as the (sub)paragraph title; place any marks before the (sub)paragraph command. Also place timing marks at your own risk within manually designed boxes or minipages and avoid using them in mathematical mode.

2.7 Customisation

The package provides some default layout for the various pieces of information to be displayed. However, it makes sense to customise some of these.

For example, one could provide a list of session dates and customise the session display by changing the commands `\timingprintsession` and/or `\timingsessionline` to show the time instead of the session number. See appendix A for a sample implementation.

Please refer to the command reference in section 3 as well as the implementation in appendix B to find out about commands to be customised: Commands suitable for customisation are among the public ones (prefix `timing`) and they should not make reference to internal commands (prefix `sti@`).

3 Command Reference

This section describes the commands provided by the package *sesstime*.

3.1 Blocks

<code>\timingstart</code>	Timing information is entered using the block commands:
<code>\timingsplit</code>	
<code>\timingstop</code>	<code>\timingstart[cond]{abstime}</code>
<code>\timingnext</code>	<code>\timingsplit[cond]{abstime}</code>
	<code>\timingstop[cond]{abstime}</code>
	<code>\timingnext[cond]{abstime}</code>

The optional argument *cond* is a comma-separated list of options described in section 3.5. The argument *abstime* represents the absolute time at this instant; it can be specified in minutes or in the format *hour:minutes*. The first three of the above commands start, split or stop a block, respectively. The last command stops a block and starts the next one at the same time.

Each of these commands has an alternative form:

```

\timingstart*[cond]{reltime}
\timingsplit*[cond]{reltime}
\timingstop*[cond]{reltime}
\timingnext*[cond]{reltime}

```

Here the argument *reltime* is a relative time (in minutes) based on the previous block command.

`\timinglapse` There are two further commands to tweak the timers in useful ways:
`\timinggauge`

`\timinglapse[cond]{reltime}`

This command lets all timers evolve by *reltime* minutes while keeping the absolute time fixed. It can be used to add or remove time from a block which is otherwise specified by absolute times. Instead of adjusting all later times by the lapse, it suffices to insert this command between two absolute time commands.

The other command implements the opposite effect:

`\timinggauge[cond]{abstime}`

This command adjusts the current reference time to *abstime* (specified as minutes or in the format *hour:minutes*) without evolving any of the timers. This can be used if a block stretches over several sessions where the absolute time changes between sessions. Gauging the time allows one to enter absolute times as read off from a clock.

`\timingblocktotal` The total time of the current block (in minutes) can be obtained by the command:

`\timingblocktotal[*][error]`

The duration is saved into the macro `\timingreturn`. The starred form returns the duration of the subsequent block instead of the current block. If the time cannot be determined the optional argument *error* (default value ‘??’) is returned.

3.2 Chapters

`\timingchapter` Chapters are started and ended by the commands:
`\timingchapterend`

`\timingchapter[cond]`
`\timingchapterend[cond]`

`\timingchapterlabel` The total duration of a chapter is determined by the commands:
`\timingchaptertotal`

`\timingchapterlabel{label}`
`\timingchaptertotal[error]{label}`
`\timingchaptertotal*[error]{chapter}`

The first one must be invoked within a chapter to assign the label *label*. The second one saves the duration for the chapter labelled by *label* into the macro `\timingreturn`. The third (starred) form selects the chapter by the number *chapter*. If undetermined, the optional argument *error* (default value ‘??’) is returned.

3.3 Sessions

`\timingsession` Sessions are started and ended by the commands:
`\timingsessionend`

`\timingsession[cond]`
`\timingsessionend[cond]`

`\timinglistofsessions` The list of sessions is printed by the command:

`\timinglistofsessions`

3.4 Comments

`\timingcomment` A comment is displayed by the command:

`\timingsession[cond]{comment}`

As space in the margin is typically very limited, it makes sense to be as concise as possible, e.g. use just a single word or two.

3.5 Flags

The optional argument *cond* for most of the above commands is a comma-separated list to specify the conditions under which the command is to be processed:

- `if=flag` – Process command only if *flag* is among the currently declared flags.
- `not=flag` – Process command unless *flag* is among the currently declared flags.

Note that the conditionals are processed in the same order as specified. After the first one is evaluated, all subsequent ones change the status only if *flag* is among the currently declared flags.

`\timingif` A command for optional processing is:

`\timingif[cond]{code}`

The code *code* is processed only if the conditions *cond* are met.

3.6 Package Options

`\timingconfigure` Options can be passed to the package by the commands:

`\usepackage[opts]{sesstime}`
or `\PassOptionsToPackage{opts}{sesstime}`
or `\timingconfigure[cond]{opts}`

`\PassOptionsToPackage` must be used before `\usepackage`; `\timingconfigure` must be used afterwards (for selected options). *opts* is a comma-separated list of options. Below we provide a complete list of available options:

- `print[=true|false]` (no value implies `true`, initially set to `true`) – Enable/disable printing all timing marks.
- `block[=true|false]` (no value implies `true`, initially set to `true`) – Enable/disable printing block marks.
- `chapter[=true|false]` (no value implies `true`, initially set to `true`) – Enable/disable printing chapter marks.
- `session[=true|false]` (no value implies `true`, initially set to `true`) – Enable/disable printing session marks.
- `comment[=true|false]` (no value implies `true`, initially set to `true`) – Enable/disable printing comments.
- `warning[=true|false]` (no value implies `true`, initially set to `true`) – Enable/disable printing warnings.

- `width=dimen` (initially set to `1cm`) – Specify width of timing marks in both margins.
- `widthl=dimen` (initially set to `1cm`) – Specify width of timing marks in the left margin which are typically related to blocks and chapters.
- `widthr=dimen` (initially set to `1cm`) – Specify width of timing marks in the right margin which are typically related to sessions and comments.
- `autosession=duration` (initially set to `0`) – Set duration of automatically determined sessions; `0` disables automatic determination.
- `depthsec=depth` (initially set to `3`) – Set maximum sectioning depth to be displayed along with their number in the list of sessions; deeper sections are considered as paragraphs and are displayed differently. Values `0` through `5` correspond to `\chapter`, `\section`, `\subsection`, `\subsubsection`, `\paragraph` and `\subparagraph`.
- `depthpar=depth` (initially set to `5`) – Set maximum sectioning depth to be displayed in list of sessions (similar to the standard L^AT_EX counter `secnumdepth`).
- `flags=flags` – Specify a comma-separated list of flags. Avoid spaces between flags.

Note that one can specify conditional evaluation for the command `\timingconfigure` to, e.g., conditionally turn on automatic determination of sessions.

4 Information

4.1 Copyright

Copyright © 2016–2026 Niklas Beisert

This work may be distributed and/or modified under the conditions of the L^AT_EX Project Public License, either version 1.3 of this license or (at your option) any later version. The latest version of this license is in <https://www.latex-project.org/lppl.txt> and version 1.3c or later is part of all distributions of L^AT_EX version 2008 or later.

This work has the LPPL maintenance status ‘maintained’.

The Current Maintainer of this work is Niklas Beisert.

This work consists of the files `README.txt`, `sesstime.ins` and `sesstime.dtx` as well as the derived files listed below.

4.2 Files and Installation

The package consists of the files:

<code>README.txt</code>	readme file
<code>sesstime.ins</code>	installation file
<code>sesstime.dtx</code>	source file
<code>sesstime.sty</code>	package file
<code>sesstime-samp.tex</code>	sample file
<code>sesstime-samp-3.tex</code>	sample include file
<code>sesstime-samp-4.tex</code>	sample include file
<code>sesstime.pdf</code>	documentation

The distribution consists of the files `README.txt`, `sesstime.ins` and `sesstime.dtx`.

- Run L^AT_EX on `sesstime.ins` to create the package `sesstime.sty` and further documentation files.

- Copy the file `sesstime.sty` to an appropriate directory of your L^AT_EX distribution, e.g. `texmf-root/tex/latex/sesstime`.
- Alternatively, you may copy `sesstime.sty` to your project directory.
- Run (pdf)L^AT_EX on `sesstime.dtx` to compile the documentation `sesstime.pdf` (this file).

4.3 Interaction with CTAN Packages

The package relies on other packages:

- This package uses the package `keyval` from the `graphics` bundle to process the options for the package, environments and macros. Compatibility with the `keyval` package has been tested with v1.15 (2014-10-28).

4.4 Feature Suggestions

The following is a list of features which may be useful for future versions of this package:

- Option to display times as *hh:mm*.
- Warnings for unknown or multiply defined labels or times.
- Display position of timing marks in two-sided documents.
- Ignore leading and trailing spaces in the list of flags.

4.5 Revision History

v1.1.4: 2026-03-23

- use elementary register manipulations
- package maintenance

v1.1.3: 2025-03-25

- maintenance and manual update

v1.12: 2019-01-17

- bugfix for changed behaviour of `\smash` in L^AT_EX 2_ε 2018-12-01

v1.11: 2018-01-17

- bugfix for section titles including `\texorpdfstring`

v1.1: 2018-01-06

- grabbing of section titles improved
- options `depthsec` and `depthpar` to adjust depth in list of sessions

v1.0: 2017-05-01

- first version published on CTAN
- manual and install package
- bugfix chapter total
- minor display changes
- specify absolute times as *hour:minutes*
- block gauge
- conditional depending on flags

v0.7: 2017-04-17

- multiple flags
- chapter labels to access total times
- bugfix for open chapters and sessions at end of document (write immediately)
- display tuned, deactivate selected marks
- public interface streamlined

v0.55 / v0.6: 2017-04-01

- block display and preview
- made flags mechanism more flexible
- block start/split/stop/next uniformised; lapse added

v0.5: 2016-11-03

- basic functionality

A Sample

In this section we provide an example of how to use some of the `sesstime` features. We also test the behaviour in some special cases.

Preamble. Standard document class:

```
1 \documentclass[12pt]{article}
```

Use package `geometry` to adjust the page layout, adjust the paragraph shape:

```
2 \usepackage{geometry}
3 \geometry{layout=a4paper}
4 \geometry{paper=a4paper}
5 \geometry{margin=3cm}
6 \parindent0pt
```

Include the `sesstime` package:

```
7 \RequirePackage{sesstime}
```

Enable automatic assignment of sessions at 30 minutes each. Optionally turn off all timing marks:

```
8 \timingconfigure{autosession=30}
9 %%\timingconfigure{print=false}
```

Declare schedule of lectures for a customised display:

```
10 \newcommand{\sessiondate}[1]{\ifcase#1\\
11 \or Mon 09:00%
12 \or Mon 10:00%
13 \or Tue 09:00%
14 \or Fri 11:00%
15 \or Fri 12:00%
16 \else END%
17 \fi}
```

Overwrite display of session marks:

```
18 \renewcommand{\timingprintsession}[2]{\timingprintremark{%
19 lecture #1\\
20 \sessiondate{#1}%
21 \timingsessiontotal[0]{#1}\ifnum\timingreturn>0%
22 \\\(\timingreturn\ min)%
23 \ifnum #2>0\\at #2 min\fi\fi\vphantom{g}}}
```

Overwrite depth of sections in session list:

```
24 \timingconfigure{depthsec=3,depthpar=4}
```

Overwrite display of sessions list:

```
25 \renewcommand{\timingsessionline}[5]{\ \ \%
26 \makebox[2em][r]{#1. }%
27 \makebox[5em][l]{\sessiondate{#1}:}%
28 \makebox[2.5em][r]{#3. }%
29 \makebox[10em][l]{\def\tmp{#5}\def\empty{}%
30 \ifx\tmp\empty #4\else\S\ #5\fi}%
31 \timingsessiontotal[0]{#1}\ifnum\timingreturn>0%
32 \ [\timingreturn\ min\ifnum #2>0; #2 min into\fi]\fi}
```

Define a macro \lorem to write out some paragraph of text:

```
33 \def\lorem{Lorem ipsum dolor sit amet, consectetur adipisicing elit,
34 sed eiusmod tempor incididunt ut labore et dolore magna aliqua.
35 Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris
36 nisi ut aliquid ex ea commodo consequat.
37 Quis aute iure reprehenderit in voluptate velit esse
38 cillum dolore eu fugiat nulla pariatur.
39 Excepteur sint obcaecat cupiditat non proident,
40 sunt in culpa qui officia deserunt mollit anim id est laborum.\par}
```

Start document body:

```
41 \begin{document}
```

Chapter 1. Basic test of functionality: First block before subsections provides several intermediate times. Both subsections are in individual blocks separated by `\timingnext`. Most times are specified in absolute terms, merely last block is stopped after a relative time. Manual display of total time in chapter:

```
42 \section{one}
```

```

43 \timingchapter
44 \timingchapterlabel{one}
45 \timingstart{0}
46 total chapter duration: \timingchaptertotal{one}\timingreturn\ min\par
47 \lorem
48 \lorem
49 \timingsplit{10}
50 \lorem
51 \timingsplit{15}
52 \lorem
53 \lorem
54 \timingstop{25}
55 \subsection{one.one}
56 \timingstart{0}
57 \lorem
58 \subsection{one.two}
59 \timingnext{15}
60 \lorem
61 \timingstop*{10}
62 \timingchapterend

```

Chapter 2. Test of some special cases. Block started without previous block closed. Specified absolute time leads to negative time evolved. Absolute time specified as *hour:minutes*. Manual display of time in block (before or after start). Behaviour within paragraph (display active/disabled):

```

63 \section{two}
64 \timingchapter
65 total following block: \timingblocktotal*\timingreturn\ min\par
66 \timingstart{0:15}
67 total current block: \timingblocktotal\timingreturn\ min\par
68 \lorem
69 \subsection{two.one}
70 \timingsplit*{10}
71 \lorem
72 \timingstart{0}
73 \subsection{two.two}
74 \timingsplit{40}
75 \lorem
76 \timingsplit{30}
77 \lorem
78 \timingstop{1:00}
79 \subsection{two.three}
80 \timingstart{0}
81 \lorem
82 some text broken
83 \timingsplit{10}
84 by active timing mark\par
85 \lorem
86 some text broken
87 {\timingconfigure{print=false}\timingsplit{15}}%
88 by inactive timing mark\par
89 \lorem
90 \timingstop{30}

```

Included Chapters 3 and 4. Test of interoperability with \include mechanism:

```

91 \include{\jobname-3}
92 \include{\jobname-4}

```

Chapter 5. Just another chapter with paragraphs:

```

93 \section{five}
94 \timingchapter
95 \paragraph{five.paragraph.}
96 \lorem
97 \timingstart{0}
98 \lorem
99 \timingsplit*{15}
100 \lorem
101 \timingsplit*{15}
102 \subsection{five.one}
103 \lorem
104 \timingsplit*{15}
105 \paragraph{five.one.paragraph.}
106 \lorem
107 \timingsplit*{15}
108 \subsection{five.two}
109 \paragraph{five.two.paragraph.}
110 \timingsession
111 \lorem
112 \timingsplit*{15}
113 \subparagraph{five.two.subparagraph.}
114 \timingsession
115 \lorem
116 \timingsplit*{15}
117 \lorem
118 \timingstop*{15}
119 \timingchapterend

```

Chapter 6. Test of \timinglapse and \timinggauge:

```

120 \section{six}
121 \timingchapter
122 \timinglapse{5}
123 \timingstart{10}
124 \lorem
125 \timinglapse{-5}
126 \lorem
127 \timingstop{20}
128 \lorem
129 \timinglapse{5}
130 \timingstart{20}
131 \lorem
132 \timingsplit{30}
133 \timinggauge{10}
134 \lorem
135 \timingstop{20}
136 \timingchapterend

```

Comments and Flags. Test comments and flags/conditionals:

```

137 \section{flags}
138 \timingcomment{test comments}

```

```

139 set flags 'two' and 'three':\timingconfigure{flags={two,three}}\par
140 one? \timingif[if=one]{yes}\par
141 two? \timingif[if=two]{yes}\par
142 one or two? \timingif[if=one,if=two]{yes}\par
143 not one? \timingif[not=one]{yes}\par
144 not two? \timingif[not=two]{yes}\par
145 not one or not two? \timingif[not=one,not=two]{yes}\par

```

List of Sessions. Test the List of Sessions.

```

146 \appendix
147 \section{list of sessions}
148 the list of sessions
149 \timinglistofsessions

```

End of document body:

```

150 \end{document}

```

Chapters 3 and 4 Include Files. A standard chapter in an included file `sesstime-samp-3.tex`:

```

151 \section{three}
152 \timingchapter
153 \timingstart{30}
154 \lorem
155 \subsection{three.one}
156 \timingsplit{35}
157 \lorem
158 \subsection{three.two}
159 \timingsplit{40}
160 \lorem
161 \timingsplit{50}
162 \lorem
163 \timingstop{60}
164 \timingchapterend

```

Another chapter in an included file `sesstime-samp-4.tex`. Test a very long interval to let automatic session generation overflow:

```

165 \section{four}
166 \timingchapter
167 \timingstart{0}
168 \lorem
169 \subsection{four.one}
170 \timingstop{25}
171 \lorem
172 \timingstart{-20}
173 \subsection{four.two}
174 \timingsplit{40}
175 \lorem
176 \timingsplit{50}
177 \lorem
178 \timingstop{60}
179 \timingchapterend

```


B Implementation

In this section we describe the package `sesstime.sty`.

Required Packages. The package loads the package `keyval` if not yet present. `keyval` is used for extended options processing:

```
180 \RequirePackage{keyval}
```

Flags. The following code compares flags for a command against a global list of flags for optional processing of the command.

`\sti@processflags` Declare variables for processing. `\sti@flags` stores the list of selected flags. `\ifsti@flag` `\ifsti@flag` is set by `\sti@processflags`. `\ifsti@flaginit` is used to detect the first specified key:

```
181 \def\sti@flags{}
182 \newif\ifsti@flag
183 \newif\ifsti@flaginit
```

Compare given flag to list of flags stored in `\sti@flags`; set `\ifsti@flag` accordingly. First key sets default to opposite of specified condition:

```
184 \define@key{sti@flag}{if}{%
185   \ifsti@flaginit\else\sti@flagfalse\fi\sti@flaginittrue
186   \def\sti@tmpa{#1}%
187   \@for\sti@tmpb:=\sti@flags\do{\ifx\sti@tmpb\sti@tmpa\sti@flagtrue\fi}}
188 \define@key{sti@flag}{not}{%
189   \ifsti@flaginit\else\sti@flagtrue\fi\sti@flaginittrue
190   \def\sti@tmpa{#1}%
191   \@for\sti@tmpb:=\sti@flags\do{\ifx\sti@tmpb\sti@tmpa\sti@flagfalse\fi}}
```

Initialise and process keys:

```
192 \newcommand{\sti@processflags}[1]{\sti@flagtrue\sti@flaginitfalse
193   \setkeys{sti@flag}{#1}}
```

`\timingif` Conditional processing:

```
194 \newcommand{\timingif}[2][\]{\sti@processflags{#1}\ifsti@flag#2\fi}
```

Internal Definitions. The following definitions store package options. The conditional `\ifsti@print[...]` indicates whether timing marks (of particular kind) should be printed. The dimensions `\sti@widthl` and `\sti@widthr` store the width of timing marks on the left and right, respectively. `\sti@autosession` stores the duration of automatically generated sessions. `\sti@depthsec` and `\sti@depthpar` store the depth of sections to be included in the list of sessions:

```
195 \newif\ifsti@print\sti@printtrue
196 \newif\ifsti@printblock\sti@printblocktrue
197 \newif\ifsti@printsession\sti@printsessiontrue
198 \newif\ifsti@printchapter\sti@printchaptertrue
199 \newif\ifsti@printwarning\sti@printwarningtrue
200 \newif\ifsti@printcomment\sti@printcommenttrue
201 \newdimen\sti@widthl\sti@widthl1cm\relax
202 \newdimen\sti@widthr\sti@widthr1cm\relax
203 \newcounter{sti@autosession}
204 \def\sti@depthsec{3}
205 \def\sti@depthpar{5}
```

Package Options. Declare package options:

```

206 \define@key{sti@}{print}[true]{\csname sti@print#1\endcsname}
207 \define@key{sti@}{block}[true]{\csname sti@printblock#1\endcsname}
208 \define@key{sti@}{chapter}[true]{\csname sti@printchapter#1\endcsname}
209 \define@key{sti@}{session}[true]{\csname sti@printsession#1\endcsname}
210 \define@key{sti@}{warning}[true]{\csname sti@printwarning#1\endcsname}
211 \define@key{sti@}{comment}[true]{\csname sti@printcomment#1\endcsname}
212 \define@key{sti@}{width}{\sti@widthl\dimexpr#1\relax\sti@widthl\sti@widthr}
213 \define@key{sti@}{widthl}{\sti@widthl\dimexpr#1\relax}
214 \define@key{sti@}{widthr}{\sti@widthr\dimexpr#1\relax}
215 \define@key{sti@}{autosession}{\c@sti@autosession\numexpr#1\relax}
216 \define@key{sti@}{flags}{\def\sti@flags{#1}}
217 \define@key{sti@}{depthsec}{\def\sti@depthsec{#1}}
218 \define@key{sti@}{depthpar}{\def\sti@depthpar{#1}}

```

`\timingconfigure` Configure package options:

```

219 \newcommand{\timingconfigure}[2][{}]{%
220   \sti@processflags{#1}%
221   \ifsti@flag
222     \setkeys{sti@}{#2}%
223   \fi}

```

Pass undeclared options on to keyval processing:

```

224 \DeclareOption*{\expandafter\timingconfigure\expandafter{\CurrentOption}}

```

Process package options:

```

225 \ProcessOptions

```

Internal Variables. Declare internal variables and counters. As they describe the status which may change in include files, they are declared as counters which are automatically stored in .aux files. Status variables for sessions (counter, within session, time elapsed):

```

226 \newcounter{sti@session}
227 \newcounter{sti@insession}
228 \newcounter{sti@sessiontime}

```

Status variables for chapters (counter, within session, time elapsed):

```

229 \newcounter{sti@chapter}
230 \newcounter{sti@inchapter}
231 \newcounter{sti@chaptertime}

```

Status variables for blocks (counter, within session, reference time, time elapsed):

```

232 \newcounter{sti@block}[sti@chapter]
233 \newcounter{sti@inblock}
234 \newcounter{sti@blockgauge}
235 \newcounter{sti@blocktime}

```

Temporary counter:

```

236 \newcount\sti@delta

```

Print Marks.

`\timingprint` Print a timing mark into left or right margin. Leave horizontal mode and print only in vertical mode:

```

237 \newcommand{\timingprint}[2][1]{%
238   \ifsti@print
239     \ifhmode\par\fi
240     \ifvmode
241       \@bsphack
242       \dimen@\prevdepth
243       \nointerlineskip
244       \if r#1%
245         \hbox{\smash{\rlap{\hspace{\textwidth}\parbox[t]{\sti@widththr}%
246           {\raggedright\renewcommand{\bfdefault}{b}#2}}}}%
247       \else
248         \hbox{\smash{\llap{\parbox[t]{\sti@widthl}%
249           {\raggedleft\renewcommand{\bfdefault}{b}#2}}}}%
250       \fi
251       \prevdepth\dimen@
252       \@esphack
253     \fi
254   \else
255     \ignorespaces
256   \fi}

```

`\timingprintmark` Print a timing mark or a remark:

```

\timingprintremark
257 \providecommand{\timingprintmark}[1]{%
258   \timingprint{\footnotesize#1}}
259 \providecommand{\timingprintremark}[1]{%
260   \timingprint[r]{\tiny\sffamily\hrule#1\hrule}}

```

`\sti@warn` Print a warning message:

```

261 \newcommand{\sti@warn}[2][1]{\ifsti@printwarning
262   \timingprint[#1]{\scriptsize\textbf{warn}\#2}\fi}

```

Comments.

`\timingprintcomment` Print a comment:

```

263 \newcommand{\timingcomment}[2][1]{%
264   \sti@processflags{#1}%
265   \ifsti@flag
266     \ifsti@printcomment\timingprintremark{#2}\fi
267   \fi}

```

Sessions.

`\sti@notesessiontotal` The following code remembers the duration of sessions. The duration is stored in the
`\ti@writesessiontotal` macro `\sti@sessiontotal@session`:

```

268 \newcommand{\sti@notesessiontotal}[2][1]{%
269   \expandafter\gdef\csname sti@sessiontotal@#1\endcsname{#2}}

```

A blank definition of the above macro is written to the `.aux` file to avoid compile errors in case the package is removed:

```

270 \AtBeginDocument{\immediate\write\@auxout{%
271   \string\providecommand{\string\sti@notesessiontotal}[2]{}}}

```

Writes the duration of the current session to the `.aux` file:

```

272 \newcommand{\sti@writesessiontotal}[1]
273   {\immediate\write\@auxout{\string\sti@notesessiontotal
274     {\the\sti@session}{#1}}}

```

\timingsessiontotal Save the duration of session number in the argument into **\timingreturn**. Return the optional argument if the duration is unavailable:

```

275 \newcommand{\timingsessiontotal}[2][??]{%
276   \expandafter\let\expandafter\timingreturn
277   \csname sti@sessiontotal@#2\endcsname
278   \ifx\timingreturn\relax\def\timingreturn{#1}\fi}

```

\sti@recordtitle Record the present sectioning title and number for usage in the list of sessions. The depth **\sti@secnum** in the first parameter in comparison to **\sti@depthsec** and **\sti@depthpar** determines whether the information is stored as section or paragraph:

```

\sti@partitle
279 \newcommand{\sti@recordtitle}[4]{\ifnum#2>\sti@depthpar\else
280   \ifnum#2>\sti@depthsec
281     \gdef\sti@partitle{#4}%
282   \else
283     \xdef\sti@secnum{#3}%
284     \gdef\sti@sectitle{#4}%
285     \gdef\sti@partitle{}%
286   \fi\fi}

```

\@startsection The following code hooks into the definition of **\@startsection** to record titles and numbers:

```

287 \let\sti@old@startsection\@startsection
288 \def\@startsection#1#2#3#4#5#6{\@ifstar
289   {\sti@ssect{#1}{#2}{#3}{#4}{#5}{#6}}%
290   {\@dblarg{\sti@ssect{#1}{#2}{#3}{#4}{#5}{#6}}}%
291 \def\sti@ssect#1#2#3#4#5#6#7{\sti@recordtitle{#1}{#2}{#7}%
292   \sti@old@startsection{#1}{#2}{#3}{#4}{#5}{#6}*{#7}%
293 \def\sti@ssect#1#2#3#4#5#6[#7]#8{{\advance\csname c@#1\endcsname1%
294   \sti@recordtitle{#1}{#2}{\csname the#1\endcsname}{#7}}%
295   \sti@old@startsection{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}}

```

\chapter The following code similarly hooks into the definitions of **\chapter** (if defined):

```

296 \ifdefined\chapter
297 \let\sti@old@chapter\chapter
298 \def\chapter{\@ifstar\sti@schapter{\@dblarg{\sti@chapter}}}
299 \def\sti@schapter#1{\sti@recordtitle{chapter}{0}{#1}\sti@old@chapter*{#1}}
300 \def\sti@chapter[#1]#2{{\advance\c@chapter1%
301   \sti@recordtitle{chapter}{0}{\thechapter}{#1}}\sti@old@chapter[#1]{#2}}
302 \fi

```

\timingprintsession Print the mark for the current session. Indicate the number and duration of the session as well as the time into the session at which the label is printed (if applicable). The arguments are **#1** session number, **#2** time into session:

```

303 \providecommand{\timingprintsession}[2]{\timingprintremark{%
304   session #1%
305   \timingsessiontotal[0]{#1}\ifnum\timingreturn>\z@
306   \\\(\timingreturn\ min)%
307   \ifnum #2>\z@\z@\at #2 min\fi\fi\vphantom{g}}}

```

`\sti@startsession` Initialise a new session:

```
308 \newcommand{\sti@startsession}{%
309   \c@sti@insession\@ne
310   \advance\c@sti@session\@ne
311   \ifsti@printsession
312     \timingprintsession\thesti@session\thesti@sessiontime
313   \fi
314   \sti@addsessionline}
```

`\sti@endsession` Close a session:

```
315 \newcommand{\sti@endsession}[1]{%
316   \sti@writesessiontotal{#1}%
317   \c@sti@insession\z@
318 }
```

`\sti@checksession` Check whether a new session should be started in autosession mode based on the time elapsed since the start of the present session. Assumes that the session has a fixed duration so that the total number of sessions approximates well the total duration. In case of coarse graining of timing information, the actual start of a session may be earlier. Recurse if necessary:

```
319 \newcommand{\sti@checksession}{%
320   \ifnum\c@sti@autosession>\z@
321     \ifodd\c@sti@insession
322       \ifnum\c@sti@sessiontime<\c@sti@autosession\else
323         \sti@endsession\thesti@autosession
324         \advance\c@sti@sessiontime-\c@sti@autosession
325         \sti@startsession
326         \sti@checksession
327       \fi
328     \else
329       \c@sti@sessiontime\z@
330       \sti@startsession
331     \fi
332   \fi}
```

`\timingsession` Start a new session. End old session if necessary:

```
333 \newcommand{\timingsession}[1][1]{%
334   \sti@processflags{#1}%
335   \ifsti@flag
336     \ifodd\c@sti@insession
337       \sti@endsession\thesti@sessiontime
338     \fi
339     \c@sti@sessiontime\z@
340     \sti@startsession
341   \fi\ignorespaces}
```

`\timingsessionend` End the session (if started). Remember session duration:

```
342 \newcommand{\timingsessionend}[1][1]{%
343   \sti@processflags{#1}%
344   \ifsti@flag
345     \ifodd\c@sti@insession
346       \sti@endsession\thesti@sessiontime
347       \c@sti@sessiontime\z@
348     \fi
349   \fi\ignorespaces}
```

End the session at the end of the document:

```
350 \AtEndDocument{\timingsessionend}
```

`\timinglistofsessions` Display the list of sessions (without a section title):

```
\timingsessionline
\sti@addsessionline 351 \newcommand{\timinglistofsessions}{\@starttoc{los}}
```

Display one line within the list of session. The arguments are #1 session number, #2 time into session, #3 section identifier, #4 section title, #5 paragraph title:

```
352 \providecommand{\timingsessionline}[5]{\ \\\%
353 \makebox[3em][r]{#1: }\makebox[2.5em][r]{#3. }%
354 \def\sti@tmp{#5}\ifx\sti@tmp\@empty #4\else\S\ #5\fi
355 \timingsessiontotal[0]{#1}\ifnum\timingreturn>\z@
356 \ [\timingreturn\ min\ifnum #2>\z@; #2 min into\fi]\fi}
```

Add a line to the list of sessions:

```
357 \newcommand{\sti@addsessionline}{%
358 \addtocontents{los}{\protect\timingsessionline
359 {\thesti@session}{\thesti@sessiontime}%
360 {\sti@secnum}{\sti@sectitle}{\sti@parttitle}}}%}
```

Chapters.

`\sti@notechaptertotal` The following code remembers the duration of chapters. Store the duration in the macro
`\sti@writechaptertotal` `\sti@chaptertotal@chapter`:

```
361 \newcommand{\sti@notechaptertotal}[2]{%
362 \expandafter\gdef\csname sti@chaptertotal@#1\endcsname{#2}}
```

A blank definition of the above macro is written to the .aux file to avoid compile errors in case the package is removed:

```
363 \AtBeginDocument{\immediate\write\@auxout{%
364 \string\providecommand{\string\sti@notechaptertotal}[2]{}}}
```

Write the duration of the current chapter to the .aux file:

```
365 \newcommand{\sti@writechaptertotal}{%
366 \immediate\write\@auxout{\string\sti@notechaptertotal
367 {\thesti@chapter}{\thesti@chaptertime}}}
```

`\timingchapterlabel` The following code remembers labels for chapters. Store the chapter number in the macro
`\sti@notechapterlabel` `\sti@chapterlabel@label`:

```
368 \newcommand{\sti@notechapterlabel}[2]{%
369 \expandafter\gdef\csname sti@chapterlabel@#1\endcsname{#2}}
```

A blank definition of the above macro is written to the .aux file to avoid compile errors in case the package is removed:

```
370 \AtBeginDocument{\immediate\write\@auxout{%
371 \string\providecommand{\string\sti@notechapterlabel}[2]{}}}
```

Write a label for the current chapter to the .aux file:

```
372 \newcommand{\timingchapterlabel}[1]{%
373 \immediate\write\@auxout{\string\sti@notechapterlabel
374 {#1}{\thesti@chapter}}}
```

`\timingchaptertotal` Save the total duration of a chapter into the macro `\timingreturn`. Return the optional argument if unavailable. Version specifying the chapter by its number:

```

375 \newcommand{\sti@chaptertotalnumber}[2][?]{%
376   \expandafter\let\expandafter\timingreturn
377     \csname sti@chaptertotal@#2\endcsname
378   \ifx\timingreturn\relax\def\timingreturn{#1}\fi}

```

Version specifying the chapter by its label:

```

379 \newcommand{\sti@chaptertotallabel}[2][?]{%
380   \expandafter\let\expandafter\timingreturn
381     \csname sti@chapterlabel@#2\endcsname
382   \ifx\timingreturn\relax\else
383     \expandafter\let\expandafter\timingreturn
384       \csname sti@chaptertotal@\timingreturn\endcsname\fi
385   \ifx\timingreturn\relax\def\timingreturn{#1}\fi}

```

Version selection:

```

386 \newcommand{\timingchaptertotal}{%
387   \@ifstar\sti@chaptertotalnumber\sti@chaptertotallabel}

```

`\timingprintchapter` Print the mark for the present chapter:

```

388 \providecommand\timingprintchapter[1]{\timingprintmark{\raisebox{2.8ex}{%
389   \textbf{\timingchaptertotal*{#1}\timingreturn}}%
390   \rlap{\kern0.4em$\star$}\kern1.2em}}}

```

`\timingchapter` Start a new chapter. End old chapter if necessary:

```

391 \newcommand{\timingchapter}[1][ ]{%
392   \sti@processflags{#1}%
393   \ifsti@flag
394     \ifodd\c@sti@inblock
395       \PackageWarning{sesstime}{chapter: still in block; stopped}%
396       \sti@warn{chap}%
397       \sti@blockstop{}{}{0}%
398     \fi
399     \timingchapterend
400     \c@sti@inchapter\@ne
401     \c@sti@chaptertime\z@
402     \advance\c@sti@chapter\@ne
403     \c@sti@block\z@
404     \ifsti@printchapter\timingprintchapter\thesti@chapter\fi
405   \fi\ignorespaces}

```

`\timingchapterend` End the chapter (if started). Remember chapter duration:

```

406 \newcommand{\timingchapterend}[1][ ]{%
407   \sti@processflags{#1}%
408   \ifsti@flag
409     \ifodd\c@sti@inblock
410       \PackageWarning{sesstime}{chapterend: still in block; stopped}%
411       \sti@warn{chap}%
412       \sti@blockstop{}{}{0}%
413     \fi
414     \ifodd\c@sti@inchapter
415       \sti@writechaptertotal
416       \c@sti@inchapter\z@

```

```

417      \c@sti@chaptertime\z@
418      \fi
419      \fi\ignorespaces}

```

End the chapter at the end of document:

```

420 \AtEndDocument{\timingchapterend}

```

Blocks.

`\sti@writeblocktotal` The following code remembers the duration of blocks. Store the duration in the macro `\sti@noteblocktotal`
`\sti@noteblocktotal` `\sti@blocktotal@chapter@block`:

```

421 \newcommand{\sti@noteblocktotal}[3]{%
422   \expandafter\gdef\csname sti@blocktotal@#1@#2\endcsname{#3}}

```

A blank definition of the above macro is written to the `.aux` file to avoid compile errors in case the package is removed:

```

423 \AtBeginDocument{\immediate\write\@auxout
424   {\string\providecommand{\string\sti@noteblocktotal}[3]{}}}

```

Write the duration of the current block to the `.aux` file:

```

425 \newcommand{\sti@writeblocktotal}{%
426   \immediate\write\@auxout{\string\sti@noteblocktotal
427     {\the sti@chapter}{\the sti@block}{\the sti@blocktime}}}

```

`\timingblocktotal` Save the duration of the current block (in starred form: subsequent block) into the macro `\timingreturn`. Return optional argument if the duration is unavailable. Version for current block:

```

428 \newcommand{\sti@blocktotalcurrent}[1][?]{%
429   \expandafter\let\expandafter\timingreturn
430     \csname sti@blocktotal@\the sti@chapter @\the sti@block\endcsname
431   \ifx\timingreturn\relax\def\timingreturn{#1}\fi}

```

Version for subsequent block:

```

432 \newcommand{\sti@blocktotalnext}[1][?]{%
433   \expandafter\let\expandafter\timingreturn
434     \csname sti@blocktotal@\the sti@chapter
435       @\the\numexpr\c@sti@block+1\relax\endcsname
436   \ifx\timingreturn\relax\def\timingreturn{#1}\fi}

```

Version selection:

```

437 \newcommand{\timingblocktotal}{%
438   \ifstar\sti@blocktotalnext\sti@blocktotalcurrent}

```

`\timingprintblock` Print block timing mark:

```

439 \newcommand{\timingprintblock}[3]{\timingprintmark{%
440   \def\sti@tmp{#2}\ifx\sti@tmp@empty
441     \raisebox{-1ex}{#1\rlap{\kern0.4em$\Uparrow$}}\kern1.2em%
442   \else
443     \def\sti@tmp{#1}\ifx\sti@tmp@empty\else
444       #1\rlap{\kern0.4em$\Uparrow$}%
445       \vphantom{$\Uparrow$}\kern1.2em\hrule\fi
446     \textbf{#2}\rlap{\vphantom{$\Uparrow$}}\kern1.2em%
447     \def\sti@tmp{#3}\ifx\sti@tmp@empty\else

```



```

448      \hrule#3\rlap{\kern0.4em$\Downarrow$%
449      \vphantom{$\Updownarrow$}}\kern1.2em\fi
450    \fi}}

```

`\sti@advance` Advance all running clocks by some amount of time:

```

451 \newcommand{\sti@advance}{%
452   \ifodd\c@sti@inblock\advance\c@sti@blocktime\sti@delta\fi
453   \ifodd\c@sti@inchapter\advance\c@sti@chaptertime\sti@delta\fi
454   \ifodd\c@sti@insession\advance\c@sti@sessiontime\sti@delta\fi}

```

`\sti@hoursminutes` Convert hours:minutes format to minutes:

```

455 \def\sti@hoursminutes#1:#2:#3!{%
456   \sti@delta\numexpr#1\relax
457   \if!#3!\else
458     \sti@delta\numexpr60*\sti@delta+#2\relax
459   \fi}

```

`\sti@computedelta` Convert an absolute time to a relative time:

```

460 \newcommand{\sti@computedelta}{%
461   \advance\sti@delta\numexpr-\c@sti@blockgauge-\c@sti@blocktime\relax}

```

`\sti@warnneg` Warn if negative time elapsed:

```

462 \newcommand{\sti@warnneg}{%
463   \ifnum\sti@delta<\z@
464     \PackageWarning{sesstime}{block: negative time elapsed}%
465     \sti@warn{neg}%
466   \fi}

```

`\timingstart` Start new block:

```

467 \newcommand{\sti@blockstart}[3]{%
468   \sti@processflags{#1}%
469   \ifsti@flag
470     \ifodd\c@sti@inblock
471       \PackageWarning{sesstime}{already in block}%
472       \sti@warn{block}
473     \else
474       \sti@hoursminutes#3::!%
475       #2%
476       \c@sti@inblock\@ne
477       \advance\c@sti@blockgauge\numexpr\c@sti@blocktime+\sti@delta\relax
478       \c@sti@blocktime\z@
479       \advance\c@sti@block\@ne
480       \sti@checksession
481       \ifsti@printblock
482         \sti@blocktotalcurrent
483         \timingprintblock{}\the\sti@chaptertime\timingreturn
484       \fi
485     \fi
486   \fi\nopagebreak}

```

Version selection:

```

487 \newcommand{\sti@blockstartat}[1][\]{\sti@blockstart{#1}\sti@computedelta}
488 \newcommand{\sti@blockstartby}[1][\]{\sti@blockstart{#1}\{}}
489 \newcommand{\timingstart}{\@ifstar\sti@blockstartby\sti@blockstartat}

```

`\timingsplit` Split current block:

```
490 \newcommand{\sti@blocksplit}[3]{%
491   \sti@processflags{#1}%
492   \ifsti@flag
493     \ifodd\c@sti@inblock
494       \sti@hoursminutes#3::!%
495       #2%
496       \sti@warnneg
497       \sti@advance
498       \sti@checksession
499       \ifsti@printblock
500         \timingprintblock\thesti@blocktime{}\}%
501       \fi
502     \else
503       \PackageWarning{sesstime}{not in block}%
504       \sti@warn{block}%
505     \fi
506   \fi}
```

Version selection:

```
507 \newcommand{\sti@blocksplitat}[1][]{\sti@blocksplit{#1}\sti@computedelta}
508 \newcommand{\sti@blocksplitby}[1][]{\sti@blocksplit{#1}\{}}
509 \newcommand{\timingsplit}{\@ifstar\sti@blocksplitby\sti@blocksplitat}
```

`\timingstop` Stop current block:

```
510 \newcommand{\sti@blockstop}[3]{%
511   \sti@processflags{#1}%
512   \ifsti@flag
513     \ifodd\c@sti@inblock
514       \sti@hoursminutes#3::!%
515       #2%
516       \sti@warnneg
517       \sti@advance
518       \sti@writeblocktotal
519       \ifsti@printblock
520         \timingprintblock\thesti@blocktime\thesti@chaptertime{}\}%
521       \fi
522       \c@sti@inblock\z@
523       \c@sti@blocktime\z@
524     \else
525       \PackageWarning{sesstime}{not in block}%
526       \sti@warn{block}%
527     \fi
528   \fi}
```

Version selection:

```
529 \newcommand{\sti@blockstopat}[1][]{\sti@blockstop{#1}\sti@computedelta}
530 \newcommand{\sti@blockstopby}[1][]{\sti@blockstop{#1}\{}}
531 \newcommand{\timingstop}{\@ifstar\sti@blockstopby\sti@blockstopat}
```

`\timingnext` Stop current block and start next block:

```
532 \newcommand{\sti@blocknext}[3]{%
533   \sti@processflags{#1}%
534   \ifsti@flag
535     \ifodd\c@sti@inblock
```

```

536     \sti@hoursminutes#3::!%
537     #2%
538     \sti@warnneg
539     \sti@advance
540     \sti@writeblocktotal
541     \advance\c@sti@block\@ne
542     \ifsti@printblock
543       \sti@blocktotalcurrent
544       \timingprintblock\thesti@blocktime\thesti@chaptertime\timingreturn
545     \fi
546     \advance\c@sti@blockgauge\c@sti@blocktime
547     \c@sti@blocktime\z@
548     \sti@checksession
549   \else
550     \PackageWarning{sesstime}{not in block}%
551     \sti@warn{block}%
552   \fi
553 \fi}

```

Version selection:

```

554 \newcommand{\sti@blocknextat}[1] [] {\sti@blocknext{#1}\sti@computedelta}
555 \newcommand{\sti@blocknextby}[1] [] {\sti@blocknext{#1}{}}
556 \newcommand{\timingnext}{\@ifstar\sti@blocknextby\sti@blocknextat}

```

\timinglapse Insert some time to the current block without changing the current absolute time:

```

557 \newcommand{\timinglapse}[2] [] {%
558   \sti@processflags{#1}%
559   \ifsti@flag
560     \sti@hoursminutes#2::!%
561     \ifodd\c@sti@inblock
562       \advance\c@sti@blockgauge-\sti@delta
563     \fi
564     \sti@advance
565   \fi}

```

\timinggauge Change the current absolute time without advancing any timers:

```

566 \newcommand{\timinggauge}[2] [] {%
567   \sti@processflags{#1}%
568   \ifsti@flag
569     \sti@hoursminutes#2::!%
570     \sti@computedelta
571     \advance\c@sti@blockgauge\sti@delta
572   \fi}

```