The clockdate package

Provides `\clock` and `\calendardate`.

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1 Introduction

1.1 About

This package provides `\clock` and `\calendardate`. `\clock` prints the time of day. `\calendardate` prints the calendar date.

1.2 Loading the package

Requirements:

- LaTeX 2_ε version 2025-11-01 or newer
- l3kernel version 2025-10-09 or newer

1.3 Syntax

This documentation uses the syntax ⟨*integer*⟩. This syntax means any integer as understood by TeX such as an explicit integer, a count register, or a macro that expands to an integer.

2 Package option

`overwrite-date`

Declares a new document command `\date` that is equivalent to `\calendardate`. This new definition of `\date` overwrites its previous definition. By default, `\date` sets the document's date which is used in `\maketitle`. Use this package option only if your document does not rely on the old definition of `\date`.

3 Commands

`\clockdatesetup` ⟨`*`⟩ {⟨*key-value list*⟩}

Sets and processes the clockdate package keys (§4) in ⟨*key-value list*⟩. Adding the optional star first resets all the clockdate package keys to their initial values. Can be used mid-document. The scope of the effect is local to the current group.

`\clock` ⟨`*`⟩ [⟨*key-value list*⟩] {⟨*token list*⟩}

Prints the time of day or a time of day range. ⟨*token list*⟩ must take either of the following forms:

- ⟨*clock*⟩
- ⟨*clock*$_1$⟩`--`⟨*clock*$_2$⟩

⟨*clock*⟩ must take any of the following forms:

- ⟨*hour*⟩`:`⟨*minute*⟩`:`⟨*second*⟩
- ⟨*hour*⟩`:`⟨*minute*⟩
- ⟨*hour*⟩

⟨*hour*⟩, ⟨*minute*⟩, and ⟨*second*⟩ must be an ⟨*integer*⟩. ⟨*hour*⟩ must be an ⟨*integer*⟩ from 0 to 24. ⟨*minute*⟩ and ⟨*second*⟩ must be an ⟨*integer*⟩ from 0 to 59.

If the optional argument is used, ⟨*key-value list*⟩ sets the keys in path `clock` for only that particular usage of `\clock`. For details on adding the optional star, see the key `clock/star` (§4.1).

`\calendardate` ⟨`*`⟩ [⟨*key-value list*⟩] {⟨*token list*⟩}

Prints the calendar date. ⟨*token list*⟩ must take any of the following forms:

- ⟨*year*⟩`-`⟨*month*⟩`-`⟨*day(s)*⟩
- ⟨*month*⟩`-`⟨*day(s)*⟩
- ⟨*year*⟩`-`⟨*month(s)*⟩

⟨*year*⟩ and ⟨*month*⟩ must be an ⟨*integer*⟩. ⟨*year*⟩ must be an ⟨*integer*⟩ from 1000 to 9999. ⟨*month*⟩ must be an ⟨*integer*⟩ from 1 to 12.

⟨*day(s)*⟩ must take any of the following forms:

- a single day ⟨*day*⟩
- a day range ⟨*day*$_1$⟩`--`⟨*day*$_2$⟩
- a comma-separated list of items where each item must be either a single day ⟨*day*⟩ or a day range ⟨*day*$_1$⟩`--`⟨*day*$_2$⟩

⟨*day*⟩ must be an ⟨*integer*⟩. The calendar date must be valid. 29 February is always valid if ⟨*year*⟩ is omitted.

⟨*month(s)*⟩ must take any of the following forms:

- a single month ⟨*month*⟩
- a month range ⟨*month*$_1$⟩`--`⟨*month*$_2$⟩
- a comma-separated list of items where each item must be either a single month ⟨*month*⟩ or a month range ⟨*month*$_1$⟩`--`⟨*month*$_2$⟩

If the optional argument is used, ⟨*key-value list*⟩ sets the keys in path `date` for only that particular usage of `\calendardate`. For details on adding the optional star, see the key `date/star` (§4.2).

4 Keys

This section documents the keys provided by the clockdate package. Set the package keys using `\clockdatesetup{`⟨*key-value list*⟩`}` (§3).

4.1 `\clock`

This subsection documents the keys that modify the behavior of `\clock`.

`clock =` ⟨*key-value list*⟩

Meta key that sets the keys in ⟨*key-value list*⟩ in path `clock`.

`clock/star =` ⟨*key-value list*⟩

When adding the optional star in `\clock`, the keys in ⟨*key-value list*⟩ in path `clock` will be set for only that particular usage of `\clock`. The initial value is ⟨*empty*⟩.

`clock/hour = 12|24`

Choice key that sets whether to print the hour in 12-hour or 24-hour format. In 24-hour format, the am/pm is always omitted. The initial value is `12`.

`clock/hour-leading-zero = true|false`

Boolean key that sets whether to print the hour with a leading zero. The initial value is `false`.

`clock/ampm =` ⟨*choice*⟩

Choice key that sets the am/pm format. ⟨*choice*⟩ must match any of the following:

- `lowercase-with-periods` (a.m./p.m.)
- `lowercase` (am/pm)
- `uppercase-with-periods` (A.M./P.M.)
- `uppercase` (AM/PM)
- `small-caps-with-periods` (A.M./P.M.)
- `small-caps` (AM/PM)
- `none`

The initial value is `lowercase-with-periods`.

If the next token after `\clock` is a period, the am/pm will not print an extra period. When the am/pm prints the period, it is followed by `\@` because the sentence does not end here.

`clock/ampm-omit-first = true|false`

Boolean key that sets whether ⟨$clock_1$⟩ prints the am/pm in a time of day range if ⟨$clock_1$⟩ and ⟨$clock_2$⟩ would either both display am or both display pm. The initial value is `true`.

`clock/hour-minute-separator` = ⟨*token list*⟩
`clock/minute-second-separator` = ⟨*token list*⟩
`clock/clock-separator` = ⟨*token list*⟩

The key `clock/hour-minute-separator` sets the separator between ⟨*hour*⟩ and ⟨*minute*⟩ to ⟨*token list*⟩. The initial value is `:`. The key `clock/minute-second-separator` sets the separator between ⟨*minute*⟩ and ⟨*second*⟩ to ⟨*token list*⟩. The initial value is `:`. The meta key `clock/clock-separator` sets the aforementioned keys to ⟨*token list*⟩.

`clock/ampm-separator` = ⟨*token list*⟩

Sets the separator before the am/pm to ⟨*token list*⟩. The initial value is ␣.

`clock/range-separator` = ⟨*token list*⟩

Sets the separator between ⟨$clock_1$⟩ and ⟨$clock_2$⟩ in a time of day range to ⟨*token list*⟩. The initial value is ␣`to`␣.

4.2 `\calendardate`

This subsection documents the keys that modify the behavior of `\calendardate`.

`date` = ⟨*key-value list*⟩

Meta key that sets the keys in ⟨*key-value list*⟩ in path `date`.

`date/star` = ⟨*key-value list*⟩

When adding the optional star in `\calendardate`, the keys in ⟨*key-value list*⟩ in path `date` will be set for only that particular usage of `\calendardate`. The initial value is ⟨*empty*⟩.

`date/order` = `month-day-year` | `day-month-year` | `year-month-day`

Choice key that sets the order in which the year, month, and day are printed. The initial value is `month-day-year`.

```
date/month/year-month-day = ⟨choice⟩
date/month/year-month = ⟨choice⟩
date/month/month-day = ⟨choice⟩
date/month = ⟨choice⟩
```

⟨*choice*⟩ must match any of the following:

- `long`
- `abbreviated` (Jan., Feb., Aug., Sept., Oct., Nov., Dec.)
- `three-letter`
- `number`
- `zero-padded-number`

The choice key `date/month/year-month-day` sets the month format when printing the year, month, and day. The initial value is `abbreviated`. The choice key `date/month/year-month` sets the month format when printing only the year and month. The initial value is `long`. The choice key `date/month/month-day` sets the month format when printing only the month and day. The initial value is `abbreviated`. The meta key `date/month` sets the aforementioned keys to ⟨*choice*⟩.

If the next token after `\calendardate` is a period, the abbreviated month will not print an extra period. When the abbreviated month prints the period, it is followed by `\@` because the sentence does not end here.

```
date/year-month-separator = ⟨token list⟩
date/month-day-separator = ⟨token list⟩
date/year-day-separator = ⟨token list⟩
date/date-separator = ⟨token list⟩
```

The key `date/year-month-separator` sets the separator between ⟨*year*⟩ and ⟨*month*⟩ to ⟨*token list*⟩. The initial value is ␣. The key `date/month-day-separator` sets the separator between ⟨*month*⟩ and ⟨*day*⟩ to ⟨*token list*⟩. The initial value is ␣. The key `date/year-day-separator` sets the separator between ⟨*year*⟩ and ⟨*day*⟩ to ⟨*token list*⟩. The initial value is `,`␣. The meta key `date/date-separator` sets the aforementioned keys to ⟨*token list*⟩.

```
date/days-separator = ⟨token list⟩
date/days-pair-separator = ⟨token list⟩
date/days-final-separator = ⟨token list⟩
```

The key `date/days-separator` sets the separator between each item in ⟨*day(s)*⟩ to ⟨*token list*⟩. The initial value is `,`␣. The key `date/days-pair-separator` sets the separator between each item in ⟨*day(s)*⟩ to ⟨*token list*⟩ when ⟨*day(s)*⟩ contains exactly two items. The initial value is ␣`and`␣. The key `date/days-final-separator` sets the separator between the last two items in ⟨*day(s)*⟩ to ⟨*token list*⟩ when ⟨*day(s)*⟩ contains three or more items. The initial value is `,`␣`and`␣.

`date/days-range-separator` = ⟨*token list*⟩

Sets the separator between ⟨*day*$_1$⟩ and ⟨*day*$_2$⟩ in a day range to ⟨*token list*⟩. The initial value is ␣to␣.

`date/months-separator` = ⟨*token list*⟩
`date/months-pair-separator` = ⟨*token list*⟩
`date/months-final-separator` = ⟨*token list*⟩

The key `date/months-separator` sets the separator between each item in ⟨*month(s)*⟩ to ⟨*token list*⟩. The initial value is ,␣. The key `date/months-pair-separator` sets the separator between each item in ⟨*month(s)*⟩ to ⟨*token list*⟩ when ⟨*month(s)*⟩ contains exactly two items. The initial value is ␣and␣. The key `date/months-final-separator` sets the separator between the last two items in ⟨*month(s)*⟩ to ⟨*token list*⟩ when ⟨*month(s)*⟩ contains three or more items. The initial value is ,␣and␣.

`date/months-range-separator` = ⟨*token list*⟩

Sets the separator between ⟨*month*$_1$⟩ and ⟨*month*$_2$⟩ in a month range to ⟨*token list*⟩. The initial value is ␣to␣.

5 References

This package uses some ideas from the datetime2 and siunitx packages. The clockdate package keys

- `clock/hour-minute-separator`
- `clock/minute-hour-separator`
- `clock/clock-separator`

resemble the following datetime2 package options:

- `hourminsep`
- `minsecsep`
- `timesep`

The clockdate package keys

- `date/year-month-separator`
- `date/month-day-separator`
- `date/year-day-separator`
- `date/date-separator`

resemble the following datetime2 package options:

- `yearmonthsep`
- `monthdaysep`
- `dayyearsep`
- `datesep`

The clockdate package keys

- `date/days-final-separator`
- `date/days-pair-separator`
- `date/days-separator`
- `date/months-final-separator`
- `date/months-pair-separator`
- `date/months-separator`

use a similar naming convention to the following siunitx package control options:

- `list-final-separator`
- `list-pair-separator`
- `list-separator`