

The `textdate` package*

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1 Introduction

When writing a LaTeX package, the release date is commonly stored in a macro such as `\filedate`, while the date is also displayed in textual form in the title of the package documentation. Maintaining both representations manually is tedious and can easily lead to inconsistencies when the package is updated.

Several L^AT_EX packages provide facilities for formatting dates. In particular, `datetime2` offers extensive support for dates, times, time zones and regional formats, while `isodate` provides several date input and output formats. These packages are appropriate when date formatting is part of a broader document requirement, but they provide considerably more functionality than is needed for this simple use case.

The `textdate` package provides a deliberately small alternative for this particular purpose. It consists of a single command `\textdate` that converts a numerical date into its textual form, taking the current language into account. The package does not aim to provide a general-purpose date formatting interface; its purpose is simply to avoid having to maintain a textual date separately from its numerical representation.

2 Usage

`\textdate` The command `\textdate{<date>}` converts a numerical date into textual form. Dates in ISO format can be written using either a hyphen or a slash as separator:

`\textdate{2026-08-07}` `\textdate{2026/08/07}`

With English as the active language, both produce: “August 7, 2026”.

A numerical date can be stored in a macro, which can be then passed to `\textdate`, to produce the same result: “August 7, 2026”.

```
\def\mydate{2026-08-07}
\textdate{\mydate}
```

*This document corresponds to `textdate` v1.0, dated 2026-10-25. It has been entirely written by ChatGPT under my supervision and after my critical review.

When the active language uses the day-month-year order, the corresponding local input format is also accepted:

```
\usepackage[french]{babel}
\usepackage{texdate}
...
\texdate{01/08/2026} % or \texdate{01-08-2026}
```

which produces: “1^{er} août 2026”.

3 Localization and limitations

The package does not load `babel` or `polyglossia`. When either package is loaded, the current language is used through the `translations` package. If no supported language is selected, English is used.

The package provides translations for English, French, German, Spanish, Italian, Portuguese and Russian. Additional languages can be added by declaring the corresponding translation keys.

The package accepts the ISO input order `YYYY-MM-DD` or `YYYY/MM/DD` independently of the current language. The local input order `DD-MM-YYYY` or `DD/MM/YYYY` is accepted for all the above predefined languages except English, which uses only the `YYYY-MM-DD` or `YYYY/MM/DD` format.

Date validation is intentionally limited to the format and to basic ranges for the day and month. The package does not perform calendar calculations; for example, `2026-02-31` has a valid date format but is not detected as an invalid calendar date.

4 Implementation

```
1 \RequirePackage{expl3}
2 \RequirePackage{translations}
3
4 \ExplSyntaxOn
5
6 % -----
7 % Translations
8 % -----
9
10 % Month names
11
12 \DeclareTranslationFallback{texdate-january}{January}
13 \DeclareTranslationFallback{texdate-february}{February}
14 \DeclareTranslationFallback{texdate-march}{March}
15 \DeclareTranslationFallback{texdate-april}{April}
16 \DeclareTranslationFallback{texdate-may}{May}
17 \DeclareTranslationFallback{texdate-june}{June}
18 \DeclareTranslationFallback{texdate-july}{July}
19 \DeclareTranslationFallback{texdate-august}{August}
20 \DeclareTranslationFallback{texdate-september}{September}
21 \DeclareTranslationFallback{texdate-october}{October}
22 \DeclareTranslationFallback{texdate-november}{November}
```

```

23 \DeclareTranslationFallback{textdate-december}{December}
24
25 % French
26
27 \DeclareTranslation{French}{textdate-january}{janvier}
28 \DeclareTranslation{French}{textdate-february}{février}
29 \DeclareTranslation{French}{textdate-march}{mars}
30 \DeclareTranslation{French}{textdate-april}{avril}
31 \DeclareTranslation{French}{textdate-may}{mai}
32 \DeclareTranslation{French}{textdate-june}{juin}
33 \DeclareTranslation{French}{textdate-july}{juillet}
34 \DeclareTranslation{French}{textdate-august}{août}
35 \DeclareTranslation{French}{textdate-september}{septembre}
36 \DeclareTranslation{French}{textdate-october}{octobre}
37 \DeclareTranslation{French}{textdate-november}{novembre}
38 \DeclareTranslation{French}{textdate-december}{décembre}
39
40 % German
41
42 \DeclareTranslation{German}{textdate-january}{Januar}
43 \DeclareTranslation{German}{textdate-february}{Februar}
44 \DeclareTranslation{German}{textdate-march}{März}
45 \DeclareTranslation{German}{textdate-april}{April}
46 \DeclareTranslation{German}{textdate-may}{Mai}
47 \DeclareTranslation{German}{textdate-june}{Juni}
48 \DeclareTranslation{German}{textdate-july}{Juli}
49 \DeclareTranslation{German}{textdate-august}{August}
50 \DeclareTranslation{German}{textdate-september}{September}
51 \DeclareTranslation{German}{textdate-october}{Oktober}
52 \DeclareTranslation{German}{textdate-november}{November}
53 \DeclareTranslation{German}{textdate-december}{Dezember}
54
55 % Spanish
56
57 \DeclareTranslation{Spanish}{textdate-january}{enero}
58 \DeclareTranslation{Spanish}{textdate-february}{febrero}
59 \DeclareTranslation{Spanish}{textdate-march}{marzo}
60 \DeclareTranslation{Spanish}{textdate-april}{abril}
61 \DeclareTranslation{Spanish}{textdate-may}{mayo}
62 \DeclareTranslation{Spanish}{textdate-june}{junio}
63 \DeclareTranslation{Spanish}{textdate-july}{julio}
64 \DeclareTranslation{Spanish}{textdate-august}{agosto}
65 \DeclareTranslation{Spanish}{textdate-september}{septiembre}
66 \DeclareTranslation{Spanish}{textdate-october}{octubre}
67 \DeclareTranslation{Spanish}{textdate-november}{noviembre}
68 \DeclareTranslation{Spanish}{textdate-december}{diciembre}
69
70 % Italian
71
72 \DeclareTranslation{Italian}{textdate-january}{gennaio}
73 \DeclareTranslation{Italian}{textdate-february}{febbraio}
74 \DeclareTranslation{Italian}{textdate-march}{marzo}
75 \DeclareTranslation{Italian}{textdate-april}{aprile}
76 \DeclareTranslation{Italian}{textdate-may}{maggio}

```

```

77 \DeclareTranslation{Italian}{textdate-june}{giugno}
78 \DeclareTranslation{Italian}{textdate-july}{luglio}
79 \DeclareTranslation{Italian}{textdate-august}{agosto}
80 \DeclareTranslation{Italian}{textdate-september}{settembre}
81 \DeclareTranslation{Italian}{textdate-october}{ottobre}
82 \DeclareTranslation{Italian}{textdate-november}{novembre}
83 \DeclareTranslation{Italian}{textdate-december}{dicembre}
84
85 % Portuguese
86
87 \DeclareTranslation{Portuguese}{textdate-january}{janeiro}
88 \DeclareTranslation{Portuguese}{textdate-february}{fevereiro}
89 \DeclareTranslation{Portuguese}{textdate-march}{março}
90 \DeclareTranslation{Portuguese}{textdate-april}{abril}
91 \DeclareTranslation{Portuguese}{textdate-may}{maio}
92 \DeclareTranslation{Portuguese}{textdate-june}{junho}
93 \DeclareTranslation{Portuguese}{textdate-july}{julho}
94 \DeclareTranslation{Portuguese}{textdate-august}{agosto}
95 \DeclareTranslation{Portuguese}{textdate-september}{setembro}
96 \DeclareTranslation{Portuguese}{textdate-october}{outubro}
97 \DeclareTranslation{Portuguese}{textdate-november}{novembro}
98 \DeclareTranslation{Portuguese}{textdate-december}{dezembro}
99
100 % Russian
101
102 \DeclareTranslation{Russian}{textdate-january}{января}
103 \DeclareTranslation{Russian}{textdate-february}{февраля}
104 \DeclareTranslation{Russian}{textdate-march}{марта}
105 \DeclareTranslation{Russian}{textdate-april}{апреля}
106 \DeclareTranslation{Russian}{textdate-may}{мая}
107 \DeclareTranslation{Russian}{textdate-june}{июня}
108 \DeclareTranslation{Russian}{textdate-july}{июля}
109 \DeclareTranslation{Russian}{textdate-august}{августа}
110 \DeclareTranslation{Russian}{textdate-september}{сентября}
111 \DeclareTranslation{Russian}{textdate-october}{октября}
112 \DeclareTranslation{Russian}{textdate-november}{ноября}
113 \DeclareTranslation{Russian}{textdate-december}{декабря}
114
115 % Date formats
116
117 \DeclareTranslationFallback
118   {textdate-format}
119   {\textdate@month\space\textdate@day,\space\textdate@year}
120
121 \DeclareTranslation{French}
122   {textdate-format}
123   {\textdate@day\space\textdate@month\space\textdate@year}
124
125 \DeclareTranslation{German}
126   {textdate-format}
127   {\textdate@day.\space\textdate@month\space\textdate@year}
128
129 \DeclareTranslation{Spanish}
130   {textdate-format}

```

```

131   {\textdate@day\space de\space\textdate@month\space de\space\textdate@year}
132
133 \DeclareTranslation{Italian}
134   {\textdate-format}
135   {\textdate@day\space\textdate@month\space\textdate@year}
136
137 \DeclareTranslation{Portuguese}
138   {\textdate-format}
139   {\textdate@day\space de\space\textdate@month\space de\space\textdate@year}
140
141 \DeclareTranslation{Russian}
142   {\textdate-format}
143   {\textdate@day\space\textdate@month\space\textdate@year\space r.}
144
145 % Date input order
146
147 \DeclareTranslationFallback
148   {\textdate-date-order}
149   {YMD}
150
151 \DeclareTranslation{French}
152   {\textdate-date-order}
153   {DMY}
154
155 \DeclareTranslation{German}
156   {\textdate-date-order}
157   {DMY}
158
159 \DeclareTranslation{Spanish}
160   {\textdate-date-order}
161   {DMY}
162
163 \DeclareTranslation{Italian}
164   {\textdate-date-order}
165   {DMY}
166
167 \DeclareTranslation{Portuguese}
168   {\textdate-date-order}
169   {DMY}
170
171 \DeclareTranslation{Russian}
172   {\textdate-date-order}
173   {DMY}
174
175 % -----
176 % Internal implementation
177 % -----
178
179 \msg_new:nnn { textdate } { invalid-date-format }
180   {
181     Invalid-date~format~'#1'.
182   }
183
184 \msg_new:nnn { textdate } { invalid-date-value }

```

```

185 {
186     Invalid-date~value~'#1'.
187 }
188
189 \tl_new:N \l_textdate_input_tl
190 \tl_new:N \l_textdate_year_tl
191 \tl_new:N \l_textdate_month_tl
192 \tl_new:N \l_textdate_day_tl
193 \tl_new:N \l_textdate_month_key_tl
194
195 \seq_new:N \l_textdate_date_seq
196
197 \int_new:N \l_textdate_month_int
198 \int_new:N \l_textdate_day_int
199
200 \NewDocumentCommand \textdate { m }
201 {
202     \textdate_parse:n { #1 }
203 }
204
205 % -----
206 % Parsing
207 % -----
208
209 \cs_new_protected:Npn \textdate_parse:n #1
210 {
211     \tl_set:Nx \l_textdate_input_tl { #1 }
212
213     \regex_replace_all:nnN
214         { / }
215         { - }
216         \l_textdate_input_tl
217
218     \seq_set_split:NnV
219         \l_textdate_date_seq
220         { - }
221         \l_textdate_input_tl
222
223     \textdate_extract:
224 }
225
226 \cs_new_protected:Npn \textdate_extract:
227 {
228     \int_compare:nNnTF
229         { \seq_count:N \l_textdate_date_seq }
230         =
231         { 3 }
232         {
233             \textdate_extract_check_first:
234         }
235         {
236             \msg_error:nnx
237                 { textdate }
238                 { invalid-date-format }

```

```

239         { \l_textdate_input_tl }
240     }
241 }
242
243 \cs_new_protected:Npn \textdate_extract_check_first:
244 {
245     \tl_set:Nx \l_tmpa_tl
246     {
247         \seq_item:Nn \l_textdate_date_seq { 1 }
248     }
249
250     \regex_match:nVTF
251     { \A\d{4}\Z }
252     \l_tmpa_tl
253     {
254         \textdate_extract_ymd:
255     }
256     {
257         \textdate_extract_dmy:
258     }
259 }
260
261 % -----
262 % Date extraction
263 % -----
264
265 \cs_new_protected:Npn \textdate_extract_ymd:
266 {
267     \tl_set:Nx \l_textdate_year_tl
268     {
269         \seq_item:Nn \l_textdate_date_seq { 1 }
270     }
271
272     \tl_set:Nx \l_textdate_month_tl
273     {
274         \seq_item:Nn \l_textdate_date_seq { 2 }
275     }
276
277     \tl_set:Nx \l_textdate_day_tl
278     {
279         \seq_item:Nn \l_textdate_date_seq { 3 }
280     }
281
282     \textdate_validate:
283 }
284
285 \cs_new_protected:Npn \textdate_extract_dmy:
286 {
287     \tl_set:Nx \l_tmpa_tl
288     {
289         \GetTranslation{textdate-date-order}
290     }
291
292     \tl_if_eq:VnTF

```

```

293     \l_tmpa_tl
294     { DMY }
295     {
296         \tl_set:Nx \l_textdate_day_tl
297         {
298             \seq_item:Nn \l_textdate_date_seq { 1 }
299         }
300
301         \tl_set:Nx \l_textdate_month_tl
302         {
303             \seq_item:Nn \l_textdate_date_seq { 2 }
304         }
305
306         \tl_set:Nx \l_textdate_year_tl
307         {
308             \seq_item:Nn \l_textdate_date_seq { 3 }
309         }
310
311         \textdate_validate:
312     }
313     {
314         \msg_error:nnx
315         { textdate }
316         { invalid-date-format }
317         { \l_textdate_input_tl }
318     }
319 }
320
321 % -----
322 % Validation
323 % -----
324
325 \cs_new_protected:Npn \textdate_validate:
326 {
327     \regex_match:nVTF
328     { \A\d+\Z }
329     \l_textdate_year_tl
330     {
331         \regex_match:nVTF
332         { \A\d+\Z }
333         \l_textdate_month_tl
334         {
335             \regex_match:nVTF
336             { \A\d+\Z }
337             \l_textdate_day_tl
338             {
339                 \int_set:Nn \l_textdate_month_int
340                 { \l_textdate_month_tl }
341
342                 \int_set:Nn \l_textdate_day_int
343                 { \l_textdate_day_tl }
344
345                 \int_compare:nNnTF
346                 { \l_textdate_month_int }

```

```

347     <
348     { 1 }
349     {
350         \msg_error:nnx
351         { textdate }
352         { invalid-date-value }
353         { \l_textdate_input_tl }
354     }
355     {
356         \int_compare:nNnTF
357         { \l_textdate_month_int }
358         >
359         { 12 }
360         {
361             \msg_error:nnx
362             { textdate }
363             { invalid-date-value }
364             { \l_textdate_input_tl }
365         }
366         {
367             \int_compare:nNnTF
368             { \l_textdate_day_int }
369             <
370             { 1 }
371             {
372                 \msg_error:nnx
373                 { textdate }
374                 { invalid-date-value }
375                 { \l_textdate_input_tl }
376             }
377             {
378                 \int_compare:nNnTF
379                 { \l_textdate_day_int }
380                 >
381                 { 31 }
382                 {
383                     \msg_error:nnx
384                     { textdate }
385                     { invalid-date-value }
386                     { \l_textdate_input_tl }
387                 }
388                 {
389                     \textdate_print:
390                 }
391             }
392         }
393     }
394 }
395 {
396     \msg_error:nnx
397     { textdate }
398     { invalid-date-format }
399     { \l_textdate_input_tl }
400 }

```

```

401     }
402     {
403         \msg_error:nnx
404         { textdate }
405         { invalid-date-format }
406         { \l_textdate_input_tl }
407     }
408 }
409 {
410     \msg_error:nnx
411     { textdate }
412     { invalid-date-format }
413     { \l_textdate_input_tl }
414 }
415 }
416
417 % -----
418 % Output
419 % -----
420
421 \cs_new:Npn \textdate_month_key:n #1
422 {
423     \int_case:nnF { #1 }
424     {
425         { 1 } { january }
426         { 2 } { february }
427         { 3 } { march }
428         { 4 } { april }
429         { 5 } { may }
430         { 6 } { june }
431         { 7 } { july }
432         { 8 } { august }
433         { 9 } { september }
434         { 10 } { october }
435         { 11 } { november }
436         { 12 } { december }
437     }
438     { }
439 }
440
441 \cs_new_protected:Npn \textdate_print:
442 {
443     \tl_set:Nx \l_textdate_month_key_tl
444     {
445         textdate-
446         \textdate_month_key:n
447         { \l_textdate_month_int }
448     }
449
450     \group_begin:
451
452     \cs_set:Npx \textdate@day
453     {
454         \int_eval:n { \l_textdate_day_tl }

```

```

455         \int_compare:nNnT { \l_textdate_day_tl } = { 1 }
456         {
457             \str_case_e:nn { \language_name }
458             {
459                 {french} {\exp_not:N \textsuperscript{er}}
460                 {italian} {°}
461             }
462         }
463     }
464
465     \cs_set:Npx \textdate@year
466     {
467         \l_textdate_year_tl
468     }
469
470     \cs_set:Npx \textdate@month
471     {
472         \exp_args:NV \GetTranslation
473         \l_textdate_month_key_tl
474     }
475
476     \GetTranslation{textdate-format}
477
478     \group_end:
479 }
480
481 \ExplSyntaxOff

```