

# The `moderntimeline` package

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## 1 Introduction

As I was reworking my CV (which uses `moderncv`), the thought came to me that instead of just putting dates in front of each entries, it would be nice to have timelines to make them more graphical and get a better grasp of the time span of each entry.

After playing a bit, I asked a question on stackexchange.com<sup>1</sup> and adapted the answer provided by Jake<sup>2</sup> and turned it into this package.

## 2 Usage

This package is to be used together with the `moderncv` class, and can be loaded with:

```
\usepackage[firstyear=1999,lastyear=2012]{moderntimeline}
```

The `firstyear` and `lastyear` options indicate the maximum dates used to calibrate the time line. They are not mandatory and can be set later by means of the `\ltmaxdates` macro.

### 2.1 Settings

Before you typeset entries, you need to adjust the settings for this package.

You can optionally set the width of the time line by calling `\tlwidth` with a dimension.

For each entry, a running line is traced behind the time line. You can set the width of this line by means of the `\tlrunningwidth` macro.

To set the color of the running line placed behind the time line, you can use the `\tlrunningcolor` macro.

If you wish to set the size of the start date label, you can do so by using

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<sup>1</sup><http://tex.stackexchange.com/questions/29725/putting-a-timeline-for-dates-in-moderncv>  
<sup>2</sup><http://tex.stackexchange.com/users/2552/jake>

`\tltextstart`, passing it a text size macro.

It also takes an optional first argument to set the position of the label, for example if you wish to center the label on the start of the line and set the text size to `\scriptsize`:

```
\tltextstart[base]{\scriptsize}
```

`\tltextend` If you wish to set the size of the end date label, you can do so by using `\tltextend`, passing it a text size macro.

It also takes an optional first argument to set the position of the label, for example if you wish to center the label on the start of the line and set the text size to `\scriptsize`:

```
\tltextend[base]{\scriptsize}
```

`\tltextsingle` If you wish to set the size of single date labels, you can do so by using `\tltextsingle`, passing it a text size macro.

For example if you wish to set the text size to `\scriptsize`:

```
\tltextsingle{\scriptsize}
```

`\tltext` You can set the sizes of both the start and end dates by calling the `\tltext` macro with a text size macro.

`\tlmaxdates` Before you can typeset any entry, you need to specify the maximal range of dates which will serve as a reference. This range will be mapped to the width of the left column, and dates will be positioned accordingly. To set the range, use the `\tlmaxdates` macro, passing it the first and last dates you will be using:

```
\tlmaxdates{1999}{2012}
```

If you are going to use the last date of the range as a start date or a unique date for an entry, you should probably set the max date a bit higher to prevent the date label from overflowing into the entry text.

Since version 0.4, you can set these dates by passing the `firstyear` and `lastyear` options to the package.

`\tlsince` When using a date range without an end year, you might want to add "Since" in front of the starting year. In order to do this, you can use the `\tlsince` macro:

```
\tlsince{Since~}
```

`\tlsetnotshadedfraction` If last year in `\tlabelcentry` and `\tllabelcentry` is 0, the bar is shaded. With this command you control the fraction of the bar that is not shaded (default = 0):

```
\tlsetnotshadedfraction{0.4} % The first 40% of the bar is not shaded
```

`\tlenablemonths`

If you want to use months when drawing bars with `\tlcentry` and `\tllabelcentry`, issue this command. This feature is not enabled by default since it changes the way the bar are drawn if the month is not specified.

`\tldisablemonths`

This macro (default behaviour) does not in fact ignore months, but retain the historical behaviour of this package to draw the bars at the beginning of the year, so is not advisable to use months in dates. Default.

## 2.2 CV entries

This package provides new CV entry commands for the `moderncv` class. They are described in this section.

`\tlcentry`

The `\tlcentry` macro lets you typeset a date range. In addition to the standard CV entry, one option and two mandatory arguments are added:

```
\tlcentry[1999]{2002}{WYSIWYG User}{Unnamed Company}
            {Somewhere}{}{Tried hard to typeset documents}
\tlcentry[blue]{2002}{0}{Happy TeXnician}{Any Company}
            {Anywhere}{}{Achieved nice typography and shared code with friends}
```

The option sets the color of the time line. If unset, the color defaults to the theme color of the CV.

The two arguments added in the beginning of the call are the start and end dates for the entry. If the position is still held, use 0 as the end date. This will add a gradient at the end of the time line.

You can also specify months (which are used only for adjusting the bar length: they are not shown in the labels), separated by a slash from the year:

```
\tlcentry[1999/2]{2002/6}{WYSIWYG User}{Unnamed Company}
            {Somewhere}{}{Tried hard to typeset documents}
\tlcentry[blue]{2002/8}{0}{Happy TeXnician}{Any Company}
            {Anywhere}{}{Achieved nice typography and shared code with friends}
```

Don't use a leading zero, since this make PGF think the number is in octal, so it complains when sees 08 and 09.

`\tllabelcentry`

The `\tllabelcentry` macro is similar to `\tlcentry`, but it takes yet a third additional argument, which lets you set a label for the time line. When this is used, the dates are not typeset around the time line, only the label is placed where the start date would normally be.

This is useful when your dates contain month names, or if the time span is too short to properly typeset the dates above and under the time line:

```
\tllabelcentry[magenta]{2002}{2003}{July--November 2002}
            {Scribus Student}{GNU School}
            {The Internet}{}{Tried Scribus for a short while}
```

It is also possible to place a label where the end date would by making use of the separator ///:

```
\tllabelcentry[magenta]{2002}{2003}{July///November 2002}
{Scribus Student}{GNU School}
{The Internet}{}{Tried Scribus for a short while}
```

You can enter months for adjusting bar length as in \tlcentry.

**\tldatecentry**  
Positions usually last long enough to draw time lines, but there are also punctual entries, such as diplomas. The \tldatecentry lets to typeset unique dates. It places a bullet on the date and typesets the date above it:

```
\tldatecentry[brown]{2011}{Trusted TeX.SX user}{}{tex.stackexchange.com}
{The Internet}{}{Achieved 20k reputation on TeX.SX}
```

**\tldatelabelcentry**  
Similarly to \tllabelcentry, you might want to place a label on a unique date entry, such as an exact date or a month. The \tldatelabelcentry provides a parameter to achieve this:

```
\tldatelabelcentry[brown]{2011}{Christmas 2011}{Happy TeXer}{}{Home}
{Townville}{}{Received Don Knuth's \emph{3:16} as a gift.}
```

### 3 Implementation

```

1 \ProvidesPackage{moderntimeline}
2 \RequirePackage{tikz}
3 \RequirePackage{kvoptions}
4 \SetupKeyvalOptions{
5   family=moderntimeline,
6   prefix=tl@,
7 }
8 \DeclareStringOption{firstyear}
9 \DeclareStringOption{lastyear}
10 \ProcessKeyvalOptions*
11 \newif\ifstartyear
12 \newif\ifissince

\tlwidth
13 \newcommand{\tlwidth}[1]{%
14   \def\tl@width{\#1}
15   \pgfmathsetmacro\tl@textstartabove{\tl@width+1pt}
16 }

\tlrunningwidth
17 \newcommand{\tlrunningwidth}[1]{%
18   \def\tl@runningwidth{\#1}
19 }
```

```

\tlrunningcolor
20 \newcommand{\tlrunningcolor}[1]{%
21     \def\tl@runningcolor{#1}
22 }

\tlsince
23 \newcommand{\tlsince}[1]{%
24     \def\tl@since{#1}
25 }

\tltextstart
26 \newcommand{\tltextstart}[2] [base west]{%
27     \tikzset{
28         tl@startyear/.style={%
29             font=#2,
30             name=tl@startyear,
31             above=\tl@textstartabove,
32             inner xsep=0pt,
33             anchor=#1,
34         }
35     }
36 }

\tltextend
37 \newcommand{\tltextend}[2] [north east]{%
38     \tikzset{
39         tl@endyear/.style={%
40             font=#2,
41             name=tl@endyear,
42             below,
43             inner xsep=0pt,
44             anchor=#1,
45         }
46     }
47 }

\tltextsingle
48 \newcommand{\tltextsingle}[1]{%
49     \tikzset{
50         tl@singleyear/.style={%
51             font=#1,
52             name=tl@singleyear,
53             above=1pt,
54             inner xsep=0pt,
55         }
56     }
57 }

\tltext
58 \newcommand{\tltext}[1]{%

```

```

59     \tltextstart{#1}%
60     \tltextend{#1}%
61     \tltextsingle{#1}%
62 }

\tlsetnotshadedfraction
63 \newcommand{\tlsetnotshadedfraction}[1]{%
64     \def\tl@nsfrac{#1}%
65 }

\tlenablemonths
66 \newcommand{\tlenablemonths}{%
67     \def\tl@nomonthvalue{6}%
68 }

\tldisablemonths
69 \newcommand{\tldisablemonths}{%
70     \def\tl@nomonthvalue{0}%
71 }

    Defaults
72 \tltext{\scriptsize}
73 \tlwidth{0.8ex}
74 \tlrunningwidth{0.05ex}
75 \tlrunningcolor{gray}
76 \tlsince{}
77 \tlsetnotshadedfraction{0}
78 \tldisablemonths

\tlmaxdates
79 \newcommand{\tlmaxdates}[2]{%
80     \def\tl@firstyear{#1}%
81     \def\tl@lastyear{#2}%
82     \pgfmathsetmacro\tl@yearrange{\tl@lastyear-\tl@firstyear}%
83 }

\tl@yearfraction
84 \newcommand{\tl@yearfraction}[1]{% Month 1 - 12 -> 0 - 11
85     \gdef\tl@tmpyear{-1}% Resetting
86     \gdef\tl@tmpmonth{-1}%
87     \begingroup%
88     \edef\tl@tempa{#1}%
89     \expandafter\endgroup\expandafter\tl@yearfraction@auxi\tl@tempa\@nnil%
90     \ifstartyear
91         \pgfmathsetmacro\tl@startyear{\tl@tmpyear+(\tl@tmpmonth-1)/12}%
92     \else
93         \ifnum\tl@tmpyear=0
94             \pgfmathsetmacro\tl@endyear{\tl@lastyear}%
95             \issincetrue%

```

```

96      \else
97          \pgfmathsetmacro\tl@endyear{\tl@tmpyear+\tl@tmpmonth/12}%
98          \issincefalse%
99      \fi
100 \fi
101 }

\tl@yearfraction@auxi
102 \newcommand{\tl@yearfraction@auxi}[2]{}
103 \def\tl@yearfraction@auxi#1/#2\@nnil{%
104     \ifnum\tl@tmpyear<0 % First call
105         \pgfmathsetmacro\tl@tmpyear{+#1}%
106         \ifx\@nnil#2\@nnil
107             \pgfmathsetmacro\tl@tmpmonth{+\tl@nomonthvalue}%
108         \else
109             \expandafter\tl@yearfraction@auxi#2\@nnil%
110         \fi
111     \else
112         \pgfmathsetmacro\tl@tmpmonth{#1}%
113     \fi
114 }

\tl@splitlabels
115 \newcommand{\tl@splitlabels}[1]{%
116     \gdef\tl@startlabel{}% Resetting
117     \begingroup%
118     \edef\@tempa{#1///}%
119     \expandafter\endgroup\expandafter\tl@splitlabels@auxi\@tempa\@nnil%
120     \ifx\tl@startlabel\empty\relax%
121         \gdef\tl@startlabel{#1}
122     \fi
123     \ifissince%
124         \xdef\tl@startlabel{\tl@since \tl@startlabel}
125     \fi
126 }

\tl@splitlabels@auxi
127 \newcommand{\tl@splitlabels@auxi}[2]{}
128 \def\tl@splitlabels@auxi#1///#2\@nnil{%
129     \ifx\tl@startlabel\empty\relax% First call
130         \gdef\tl@startlabel{#1}
131         \ifx\@nnil#2\@nnil
132             \gdef\tl@startlabel{}%
133         \else
134             \expandafter\tl@splitlabels@auxi#2\@nnil%
135         \fi
136     \else
137         \gdef\tl@endlabel{#1}
138     \fi
139 }

```

```

\tl@formatstartyear
140 \newcommand{\tl@formatstartyear}[1]{
141   \startyeartrue
142   \tl@yearfraction{#1}
143   \pgfmathsetmacro{\tl@startfraction}{(\tl@startyear-\tl@firstyear)/(\tl@lastyear-\tl@firstyear)}
144   \ifissince
145     \xdef\tl@startlabel{\tl@since \tl@tmpyear}
146   \else
147     \xdef\tl@startlabel{\tl@tmpyear}
148   \fi
149 }

\tl@formatendyear
150 \newcommand{\tl@formatendyear}[1]{
151   \startyearfalse%
152   \tl@yearfraction{#1}
153   \pgfmathsetmacro{\tl@endfraction}{(\tl@endyear-\tl@firstyear)/(\tl@lastyear-\tl@firstyear)}%
154   \ifissince%
155     \xdef\tl@endlabel{}
156   \else
157     \xdef\tl@endlabel{\tl@tmpyear}
158   \fi
159 }

\tldatelabelcentry
160 \newcommand{\tldatelabelcentry}[8][color1]{%
161 \isssincefalse
162 \tl@formatstartyear{#2}
163 \centry{\tikz [baseline=0pt]{
164   \useasboundingbox (0,-1.5ex) rectangle (\hintscolumnwidth,1ex);
165   \fill [\tl@runningcolor] (0,0)
166   rectangle (\hintscolumnwidth,\tl@runningwidth);
167   \fill [#1] (0,0)
168   ++(\tl@startfraction*\hintscolumnwidth,0pt)
169   node [tl@startyear] {#3}
170   node {$\bullet$};
171 }
172 }
173 {#4}{#5}{#6}{#7}{#8}
174 }

\tldatecentry
175 \newcommand{\tldatecentry}[7][color1]{%
176 \isssincefalse
177 \tl@formatstartyear{#2}
178 \centry{\tikz [baseline=0pt]{
179   \useasboundingbox (0,-1.5ex) rectangle (\hintscolumnwidth,1ex);
180   \fill [\tl@runningcolor] (0,0)

```

```

181      rectangle (\hintscolumnwidth,\tl@runningwidth);
182      \fill [#1] (0,0)
183      ++(\tl@startfraction*\hintscolumnwidth,0pt)
184      node [tl@singleyear] {#2}
185      node {$\bullet$};
186  }%
187 }%
188 {#3}{#4}{#5}{#6}{#7}%
189 }

\tlcventry
190 \newcommand{\tlcventry}[8][color1]{%
191 \tl@formatendyear{#3}
192 \tl@formatstartyear{#2}
193 \cventry{\tikz[baseline=0pt]{%
194   \useasboundingbox (0,-1.5ex) rectangle (\hintscolumnwidth,1ex);
195   \fill [\tl@runningcolor] (0,0)
196   rectangle (\hintscolumnwidth,\tl@runningwidth);
197   \fill [#1] (0,0)
198   ++(\tl@startfraction*\hintscolumnwidth,0pt)
199   node [tl@startyear] {\tl@startlabel}
200   rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width-1pt)
201   node [tl@endyear] f\tl@endlabel
202   (\hintscolumnwidth,0pt) ;
203   \ifissince
204     \newdimen\fullcolorwidth
205     \pgfmathsetlength\fullcolorwidth{\tl@startfraction*(1+(1-\tl@startfraction)*\tl@nsfrac)*
206     \shade [left color=#1,right color=#1]
207 (\tl@startfraction*\hintscolumnwidth,0)
208     rectangle (\fullcolorwidth,\tl@width);
209     \shade [left color=#1] (\fullcolorwidth,0)
210     rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
211   \else
212     \fill [#1] (\tl@startfraction*\hintscolumnwidth,0)
213     rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
214   \fi
215 }%
216 }%
217 {#4}{#5}{#6}{#7}{#8}%
218 }

\tllabelcventry
219 \newcommand{\tllabelcventry}[9][color1]{%
220 \tl@formatendyear{#3}
221 \tl@formatstartyear{#2}
222 \tl@splitlabels{#4}
223 \cventry{\tikz[baseline=0pt]{%
224   \fill [\tl@runningcolor] (0,0)
225   rectangle (\hintscolumnwidth,\tl@runningwidth);

```

```

226      \useasboundingbox (0,-1.5ex)
227      rectangle (\hintscolumnwidth,1ex);
228      \fill [#1] (0,0)
229      ++(\tl@startfraction*\hintscolumnwidth,0pt)
230      node [tl@startyear] {\tl@startlabel}
231      rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width-1pt)
232      node [tl@endyear] {\tl@endlabel}
233      (\hintscolumnwidth,0pt) ;
234      \ifissince
235          \newdimen\fullcolorwidth
236          \pgfmathsetlength\fullcolorwidth{\tl@startfraction*(1+(1-\tl@startfraction)*\tl@nsfrac)*
237          \shade [left color=#1,right color=#1]
238 (\tl@startfraction*\hintscolumnwidth,0)
239          rectangle (\fullcolorwidth,\tl@width);
240          \shade [left color=#1] (\fullcolorwidth,0)
241          rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
242      \else
243          \fill [#1] (\tl@startfraction*\hintscolumnwidth,0)
244          rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
245      \fi
246  }
247 }
248 {#5}{#6}{#7}{#8}{#9}%
249 }
```

## Change History

0.1			tltextsingle, thanks to Stphane Dupille . . . . . 1
General: Initial release . . . . . 1			
0.10	0.6		
General: Add support to specify label for end date, thanks to ypid and Astrinus . . . . . 1	0.7		General: Fix compatibility with moderncv 0.15.1 . . . . . 1
0.2			
General: Add tlsince and options for tltext* . . . . . 1			General: Various fixes by Jake to allow fractional years in tllabelcentry . . . . . 1
0.3	0.8		
General: Bugfix: initialize tlsince . 1			General: Add the tlsetnotshadedfraction command, thanks to Stefano Gronchi . . . . . 1
0.4			
General: Add firstyear and lastyear options . . . . . 1			General: Add month support, thanks to Astrinus . . . . . 1
0.5	0.9		
General: Fix positions in tlcentry and tldatecentry, add			

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