The moderntimeline package

Raphal Pinson
raphink@gmail.com

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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[1] and adapted the answer provided by Jake[2] 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.

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

`\tlrunningwidth` 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.

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

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

[1] http://tex.stackexchange.com/questions/29725/putting-a-timeline-for-dates-in-moderncv
[2] 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 positionned 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 `\tlcventry` and `\tllabelcventry` 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 `\tlcventry` and `\tllabelcventry`, 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.

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

```
\tlcventry{1999}{2002}{WYSIWYG User}{Unnamed Company}
    {Somewhere}{}{Tried hard to typeset documents}
\tlcventry[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:

```
\tlcventry{1999/2}{2002/6}{WYSIWYG User}{Unnamed Company}
    {Somewhere}{}{Tried hard to typeset documents}
\tlcventry[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`.

\tllabelcventry The `\tllabelcventry` macro is similar to `\tlcventry`, 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:

```
\tllabelcventry[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 `\tlcventry`.

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

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

`\tldatelabelcventry` Similarly to `\tllabelcventry`, you might want to place a label on a unique date entry, such as an exact date or a month. The `\tldatelabelcventry` provides a parameter to achive this:

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

3 Implementation

```
\ProvidesPackage{moderntimeline}
\RequirePackage{tikz}
\RequirePackage{kvoptions}
\SetupKeyvalOptions{
   family=moderntimeline,
   prefix=tl@,
}
\DeclareStringOption{firstyear}
\DeclareStringOption{lastyear}
\ProcessKeyvalOptions*
\newif\ifstartyear
\newif\ifissince
```

`\tlwidth`

```
\newcommand{\tlwidth}[1]{%
   \def\tl@width{#1}
   \pgfmathsetmacro\tl@textstartabove{\tl@width+1pt}
}
```

`\tlrunningwidth`

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

`\tlrunningcolor`

```
\newcommand{\tlrunningcolor}[1]{%
   \def\tl@runningcolor{#1}
}
```

\tlsince

```
\newcommand{\tlsince}[1]{%
   \def\tl@since{#1}
}
```

\tltextstart

```
\newcommand{\tltextstart}[2][base west]{%
   \tikzset{
       tl@startyear/.style={
           font=#2,
           name=tl@startyear,
           above=\tl@textstartabove,
           inner xsep=0pt,
           anchor=#1,
       }
   }
}
```

\tltextend

```
\newcommand{\tltextend}[2][north east]{%
   \tikzset{
       tl@endyear/.style={
           font=#2,
           name=tl@endyear,
           below,
           inner xsep=0pt,
           anchor=#1,
       }
   }
}
```

\tltextsingle

```
\newcommand{\tltextsingle}[1]{%
   \tikzset{
       tl@singleyear/.style={
           font=#1,
           name=tl@singleyear,
           above=1pt,
           inner xsep=0pt,
       }
   }
}
```

\tltext

```
\newcommand{\tltext}[1]{%
   \tltextstart{#1}%
   \tltextend{#1}%
   \tltextsingle{#1}%
}
```

\tlsetnotshadedfraction

```
\newcommand{\tlsetnotshadedfraction}[1]{%
   \def\tl@nsfrac{#1}
}
```

\tlenablemonths

```
\newcommand{\tlenablemonths}{%
   \def\tl@nomonthvalue{6}
}
```

\tldisablemonths

```
\newcommand{\tldisablemonths}{%
   \def\tl@nomonthvalue{0}
}
```

Defaults

```
\tltext{\scriptsize}
\tlwidth{0.8ex}
\tlrunningwidth{0.05ex}
\tlrunningcolor{gray}
\tlsince{}
\tlsetnotshadedfraction{0}
\tldisablemonths
```

\tlmaxdates

```
\newcommand{\tlmaxdates}[2]{%
   \def\tl@firstyear{#1}
   \def\tl@lastyear{#2}
   \pgfmathsetmacro\tl@yearrange{\tl@lastyear-\tl@firstyear}
}
```

\tl@yearfraction

```
\newcommand{\tl@yearfraction}[1]{% Month 1 - 12 -> 0 - 11
  \gdef\tl@tmpyear{-1}% Resetting
  \gdef\tl@tmpmonth{-1}%
  \begingroup%
  \edef\@tempa{#1/}%
  \expandafter\endgroup\expandafter\tl@yearfraction@auxi\@tempa\@nnil%
  \ifstartyear
    \pgfmathsetmacro\tl@startyear{\tl@tmpyear+(\tl@tmpmonth-1)/12}%
  \else
    \ifnum\tl@tmpyear=0
      \pgfmathsetmacro\tl@endyear{\tl@lastyear}%
      \issincetrue%
    \else
      \pgfmathsetmacro\tl@endyear{\tl@tmpyear+\tl@tmpmonth/12}%
      \issincefalse%
    \fi
  \fi
}
```

\tl@yearfraction@auxi

```
\newcommand{\tl@yearfraction@auxi}[2]{}
\def\tl@yearfraction@auxi#1/#2\@nnil{%
  \ifnum\tl@tmpyear<0 % First call
    \pgfmathsetmacro\tl@tmpyear{+#1}%
    \ifx\@nnil#2\@nnil
      \pgfmathsetmacro\tl@tmpmonth{+\tl@nomonthvalue}%
    \else
      \expandafter\tl@yearfraction@auxi#2\@nnil%
    \fi
  \else
    \pgfmathsetmacro\tl@tmpmonth{#1}%
  \fi
}
```

\tl@splitlabels

```
\newcommand{\tl@splitlabels}[1]{
  \gdef\tl@startlabel{}% Resetting
  \begingroup%
  \edef\@tempa{#1///}%
  \expandafter\endgroup\expandafter\tl@splitlabels@auxi\@tempa\@nnil%
}
```

\tl@splitlabels@auxi

```
\newcommand{\tl@splitlabels@auxi}[2]{}
\def\tl@splitlabels@auxi#1///#2\@nnil{%
  \ifx\tl@startlabel\empty\relax% First call
    \gdef\tl@startlabel{#1}
    \ifx\@nnil#2\@nnil
      \gdef\tl@startlabel{}
    \else
      \expandafter\tl@splitlabels@auxi#2\@nnil%
    \fi
  \else
    \gdef\tl@endlabel{#1}
  \fi
}
```

\tl@formatstartyear

```
\newcommand{\tl@formatstartyear}[1]{
  \startyeartrue
  \tl@yearfraction{#1}
  \pgfmathsetmacro\tl@startfraction{(\tl@startyear-\tl@firstyear)/(\tl@lastyear-\tl@firstyear)}
  \ifissince
    \xdef\tl@startlabel{\tl@since \tl@tmpyear}
  \else
    \xdef\tl@startlabel{\tl@tmpyear}
  \fi
}
```

\tl@formatendyear

```
\newcommand{\tl@formatendyear}[1]{
  \startyearfalse%
  \tl@yearfraction{#1}
  \pgfmathsetmacro\tl@endfraction{(\tl@endyear-\tl@firstyear)/(\tl@lastyear-\tl@firstyear)}%
  \ifissince%
    \xdef\tl@endlabel{}
  \else
    \xdef\tl@endlabel{\tl@tmpyear}
  \fi
}
```

\tldatelabelcventry

```
\newcommand{\tldatelabelcventry}[8][color1]{%
\issincefalse
\tl@formatstartyear{#2}
\cventry{\tikz{
     \fill [\tl@runningcolor] (0,0)
        rectangle (\hintscolumnwidth,\tl@runningwidth);
     \fill [#1] (0,0)
        ++(\tl@startfraction*\hintscolumnwidth,0pt)
        node [tl@startyear] {#3}
        node {$\bullet$};
   }
}
{#4}{#5}{#6}{#7}{#8}
}
```

\tldatecventry

```
\newcommand{\tldatecventry}[7][color1]{%
\issincefalse
\tl@formatstartyear{#2}
\cventry{\tikz[baseline=0pt]{
    \useasboundingbox (0,-1.5ex) rectangle (\hintscolumnwidth,1ex);
    \fill [\tl@runningcolor] (0,0)
       rectangle (\hintscolumnwidth,\tl@runningwidth);
    \fill [#1] (0,0)
       ++(\tl@startfraction*\hintscolumnwidth,0pt)
       node [tl@singleyear] {#2}
       node {$\bullet$};
  }%
}%
{#3}{#4}{#5}{#6}{#7}%
}
```

\tlcventry

```
\newcommand{\tlcventry}[8][color1]{%
```

```
\tl@formatendyear{#3}
\tl@formatstartyear{#2}
 \cventry{\tikz[baseline=0pt]{
    \useasboundingbox (0,-1.5ex) rectangle (\hintscolumnwidth,1ex);
    \fill [\tl@runningcolor] (0,0)
       rectangle (\hintscolumnwidth,\tl@runningwidth);
    \fill [#1] (0,0)
       ++(\tl@startfraction*\hintscolumnwidth,0pt)
       node [tl@startyear] {\tl@startlabel}
       rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width-1pt)
       node [tl@endyear] {\tl@endlabel}
       (\hintscolumnwidth,0pt) ;
    \ifissince
       \newdimen\fullcolorwidth
       \pgfmathsetlength\fullcolorwidth{\tl@startfraction*(1+(1-\tl@startfraction)*\tl@nsfrac)*
       \shade [left color=#1,right color=#1]
(\tl@startfraction*\hintscolumnwidth,0)
           rectangle (\fullcolorwidth,\tl@width);
       \shade [left color=#1] (\fullcolorwidth,0)
           rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
    \else
       \fill [#1] (\tl@startfraction*\hintscolumnwidth,0)
           rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
    \fi
    }%
}%
{#4}{#5}{#6}{#7}{#8}%
}
```

\tllabelcventry

```
\newcommand{\tllabelcventry}[9][color1]{%
\tl@formatendyear{#3}
\tl@formatstartyear{#2}
 \cventry{\tikz[baseline=0pt]{
     \fill [\tl@runningcolor] (0,0)
        rectangle (\hintscolumnwidth,\tl@runningwidth);
     \useasboundingbox (0,-1.5ex)
        rectangle (\hintscolumnwidth,1ex);
     \fill [#1] (0,0)
        ++(\tl@startfraction*\hintscolumnwidth,0pt)
        node [tl@startyear] {#4}
        rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width-1pt) ;
    \ifissince
       \newdimen\fullcolorwidth
       \pgfmathsetlength\fullcolorwidth{\tl@startfraction*(1+(1-\tl@startfraction)*\tl@nsfrac)*
       \shade [left color=#1,right color=#1]
(\tl@startfraction*\hintscolumnwidth,0)
           rectangle (\fullcolorwidth,\tl@width);
       \shade [left color=#1] (\fullcolorwidth,0)
```

```
231            rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
232      \else
233         \fill [#1] (\tl@startfraction*\hintscolumnwidth,0)
234             rectangle (\tl@endfraction*\hintscolumnwidth,\tl@width);
235      \fi
236      }
237 }
238 {#5}{#6}{#7}{#8}{#9}%
239 }
```

Change History

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

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols

\@nnil 89, 103, 106, 109, 119, 122, 125, 128
\@tempa . 88, 89, 118, 119

B

\begingroup 87, 117
\bullet 163, 178

C

\cventry 157, 171, 186, 215

D

\DeclareStringOption 8, 9
\def 14, 18, 21, 24, 64, 67, 70, 80, 81, 103, 122

E

\edef 88, 118
\else . . . 92, 96, 108, 111, 127, 130, 140, 150, 204, 232
\empty 123
\endgroup 89, 119
\expandafter 89, 109, 119, 128

F

\fi . . . 99, 100, 110, 113, 129, 132, 142, 152, 207, 235
\fill . 158, 160, 173, 175, 188, 190, 205, 216, 220, 233
\fullcolorwidth 197, 198, 201, 202,

225, 226, 229, 230

G

\gdef 85, 86, 116, 124, 126, 131

H

\hintscolumnwidth 159, 161, 172, 174, 176, 187, 189, 191, 193, 195, 198, 200, 203, 205, 206, 217, 219, 221, 223, 226, 228, 231, 233, 234

I

\ifissince 12, 138, 148, 196, 224
\ifnum 93, 104
\ifstartyear 11, 90
\ifx 106, 123, 125
\issincefalse 98, 155, 169
\issincetrue 95

N

\newdimen 197, 225
\newif 11, 12

P

\pgfmathsetlength 198, 226
\pgfmathsetmacro 15, 82, 91, 94, 97, 105, 107, 112, 137, 147
\ProcessKeyvalOptions 10
\ProvidesPackage . . . 1

R

\relax 123
\RequirePackage . . 2, 3

S

\scriptsize 72
\SetupKeyvalOptions . 4
\shade 199, 202, 227, 230
\startyearfalse . . . 145
\startyeartrue 135

T

\tikz . 157, 171, 186, 215
\tikzset 27, 38, 49
\tl@endfraction . . . 147, 193, 203, 206, 223, 231, 234
\tl@endlabel 131, 149, 151, 194
\tl@endyear . 94, 97, 147
\tl@firstyear 80, 82, 137, 147
\tl@formatendyear 144, 184, 213
\tl@formatstartyear 134, 156, 170, 185, 214
\tl@lastyear 81, 82, 94, 137, 147
\tl@nomonthvalue 67, 70, 107
\tl@nsfrac 64, 198, 226
\tl@runningcolor 21, 158, 173, 188, 216
\tl@runningwidth 18, 159, 174, 189, 217
\tl@since 24, 139
\tl@splitlabels . . . 115
\tl@splitlabels@auxi 119, 121
\tl@startfraction 137, 161, 176, 191, 198, 200, 205, 221, 226, 228, 233
\tl@startlabel 116, 123, 124, 126, 139, 141, 192
\tl@startyear . . 91, 137
\tl@textstartabove 15, 31
\tl@tmpmonth 86, 91, 97, 107, 112
\tl@tmpyear 85, 91, 93, 97, 104, 105, 139, 141, 151
\tl@width 14, 15, 193, 201, 203, 206, 223, 229, 231, 234
\tl@yearfraction 84, 136, 146
\tl@yearfraction@auxi 89, 102
\tl@yearrange 82
\tlcventry *3*, 183
\tldatecventry . . *4*, 168
\tldatelabelcventry *4*, 154
\tldisablemonths *3*, 69, 78
\tlenablemonths . . *3*, 66
\tllabelcventry . *3*, 212
\tlmaxdates *2*, 79
\tlrunningcolor *1*, 20, 75
\tlrunningwidth *1*, 17, 74
\tlsetnotshadedfraction *2*, 63, 77
\tlsince *2*, 23, 76
\tltext *2*, 58, 72
\tltextend . . . *2*, 37, 60
\tltextsingle . *2*, 48, 61
\tltextstart . . *1*, 26, 59
\tlwidth *1*, 13, 73

U

\useasboundingbox 172, 187, 218

X

\xdef . 139, 141, 149, 151