`timeline` Package

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Abstract

The `timeline` package provides an easy interface to create and maintain timelines. Its macros utilise the `tikzenvironment` and commands from the `pgf` package. The date granularity for entries on a timebar is year and month.

1 License

2 Environment options

The environment `timeline` has five optional arguments:

```
\begin{timeline}
  [⟨InnerBackgroundColor⟩]
  [⟨InnerForegroundColor⟩]
  [⟨OuterBackgroundColor⟩]
  [⟨OuterForegroundColor⟩]
  [⟨ConnectorColor⟩]
```

They define the respective color for the events on the timeline. Default settings are some orange ■ with black text for the inner part and some blueish ■ with white text for the outer part. If the fifth parameter for the connector color is not specified, then the ⟨*InnerBackgroundColor*⟩ will be used instead. Feel free to change the colours via the parameters.

3 Commands

Inside the `timeline` environment one can use the following commands.

Add a timebar This is done via the 6-parameter command

```
\timebar{⟨startsymbol⟩}
  {⟨startXcoordinate⟩}
  {⟨fromYear⟩}
  {⟨toYear⟩}
  {⟨stepLength⟩}
  {⟨endSymbol⟩}
```

⟨*startSymbol*⟩ can be any symbol one could put on the left side of '`-`' at `\draw[-]` in the `tikz`-command.

⟨*startXcoordinate*⟩ is the x-coordinate. y is always considered to be 0.

⟨*fromYear*⟩ is in `YYYY`.

⟨*toYear*⟩ is in `YYYY`.

⟨*stepLength*⟩ is the length of one year on the timebar.

⟨*endSymbol*⟩ can be any symbol one could put on the right side of '`-`' at `\draw[-]` in the `tikz`-command.

Notice, that the `timebar`-command has one optional argument that allows you to specify the intervals at which the year label is displayed. The default value for this interval is `5`. (Thanks at gowachin for implementing!)

Add a crunched bar part. Used to literally skip some parts in the timebar where nothing happens. Drawn via the command

```
1  \zigzag{⟨xStartCoordinate⟩}
```

⟨*xStartCoordinate*⟩ is the x-coordinate where it should start. Usually, when using this command, one has to calculate the x-coordinate by hand from what was executed before. Then length of the zigzag is 0.4.

Entries. An entry has four possible commands, depending on whether it should appear above, below, shifted above, or shifted below. For the unshifted versions the following commands are used.

```
1  \entry{⟨year⟩}{⟨what⟩}{⟨who⟩}
2  \flipentry{⟨year⟩}{⟨what⟩}{⟨who⟩}
```

⟨*year*⟩ is `YYYY` or `YYYY-MM` which has to exists on the timebar. Such labels are automatically created in the process of executing a `timebar`-command. More precisely, you have to execute a `timebar`-command with ⟨*fromYear*⟩ as Y_1 and ⟨*toYear*⟩ as Y_2 and then can use an `entry`/`flipentry`/`entryshift`/`flipentryshift`-command with ⟨*year*⟩ which is has to be between Y_1 and Y_2. Otherwise it will create a missing label error.

⟨*what*⟩ is the content of the inner (near the timebar) box.

⟨*who*⟩ is the content of the outer box.

```
1  \entryshift{⟨year⟩}{⟨what⟩}{⟨who⟩}{⟨distance⟩}
2  \flipentryshift{⟨year⟩}{⟨what⟩}{⟨who⟩}{⟨distance⟩}
```

⟨*distance*⟩ is the length (often specified in mm) which shifts the entry to the right (in direction of the x-coordinate).

Regarding all entries, the 'minimum height' of a node is automatically set to

```
\maxof{\heightof{#3}}{\heightof{#4}}+1.5mm
```

that is, the maximum of the font heights of the ⟨*who*⟩- and ⟨*what*⟩-values plus an inner sep of 1.5 mm.

Opacity. Thanks to gowachin, there exists the possibility to make labels opaque (using the `opacity`-argument of nodes in TikZ. This is an optional argument which is possible for the macros `entry`/`flipentry`/`entryshift`/`flipentryshift`, e.g.,

```
\entry[0.5]{2008}{entry}{opacity}.
```

Here, `[0.5]` denotes an opacity of this particular entry making it moderately translucent or opaque. Also see the second example below.

4 Example 1

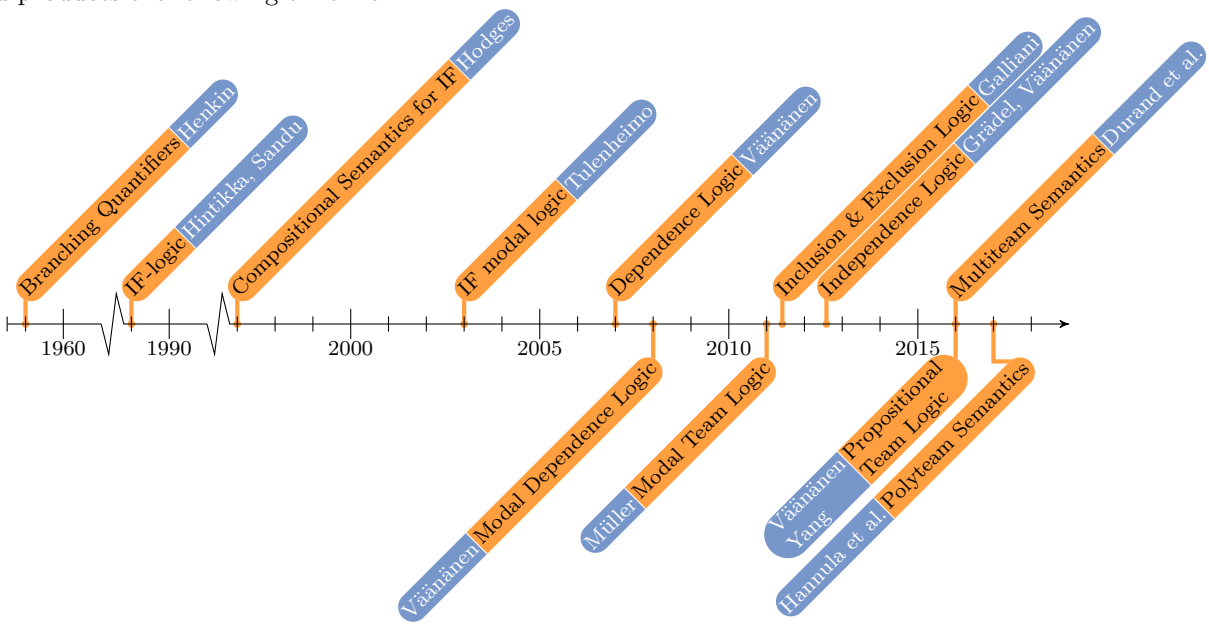
A small example is provided to demonstrate the commands:

```
\begin{timeline}
  \timebar{|}{0}{1959}{1960}{.5}{}
  \zigzag{1}
  \entry{1959}{Branching Quantifiers}{Henkin}

  \timebar{}{1.4}{1989}{1990}{.5}{}
  \zigzag{2.4}
  \entry{1989}{IF-logic}{Hintikka, Sandu}

  \timebar{}{2.8}{1997}{2018}{.5}{stealth'}
  \entry{1997}{Compositional Semantics for IF}{Hodges}
  \entry{2003}{IF modal logic}{Tulenheimo}
  \entry{2007}{Dependence Logic}{Väänänen}
  \flipentry{2008}{Modal Dependence Logic}{Väänänen}
  \entry{2011-6}{Inclusion \& Exclusion Logic}{Galliani}
  \entry{2012-8}{Independence Logic}{Grädel, Väänänen}
  \flipentry{2011}{Modal Team Logic}{Müller}
  \entry{2016}{Multiteam Semantics}{Durand et al.}
  \flipentry{2016}{Propositional\\ Team Logic}{Väänänen\\Yang}
  \flipentryshift{2017}{Polyteam Semantics}{Hannula et al.}{3mm}
\end{timeline}
```

and produces the following timeline:



5 Example 2 (Opacity and Interval Year)

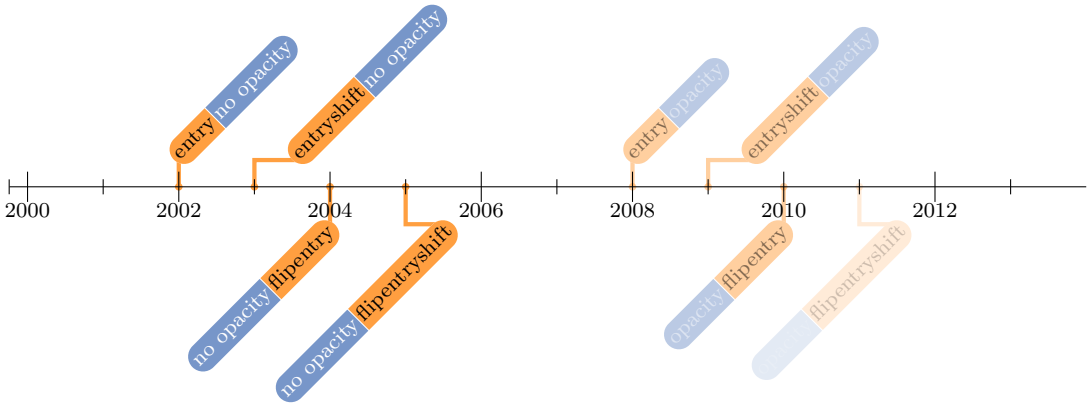
A small example by gowachin to demonstrate the optional opacity argument:

```
\begin{timeline}
 \timebar[2]{|}{0}{2000}{2013}{1}{}

  \entry{2002}{entry}{no opacity}
  \entryshift{2003}{entryshift}{no opacity}{4mm}
  \flipentry{2004}{flipentry}{no opacity}
  \flipentryshift{2005}{flipentryshift}{no opacity}{4mm}

  \entry[0.5]{2008}{entry}{opacity}
  \entryshift[0.5]{2009}{entryshift}{opacity}{4mm}
  \flipentry[0.5]{2010}{flipentry}{opacity}
  \flipentryshift[0.2]{2011}{flipentryshift}{opacity}{4mm}
\end{timeline}
```

produces then the following timeline, where the entries at the rear are having different opacities.



6 Acknowledgements

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