Package ‘textgRid’

September 21, 2016

Title Praat TextGrid Objects in R

Version 1.0.1

Description The software application Praat can be used to annotate
waveform data (e.g., to mark intervals of interest or to label events).
(See <http://www.fon.hum.uva.nl/praat/> for more information about Praat.)
These annotations are stored in a Praat TextGrid object, which consists of
a number of interval tiers and point tiers. An interval tier consists of
sequential (i.e., not overlapping) labeled intervals. A point tier consists
of labeled events that have no duration. The 'textgRid' package provides
S4 classes, generics, and methods for accessing information that is stored
in Praat TextGrid objects.

Depends R (>= 3.2.3)

Imports methods

Suggests testthat

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 5.0.1

Collate 'Tier-class.R' 'IntervalTier-class.R'
  'IntervalTier-accessors.R' 'IntervalTier-constructor.R'
  'IntervalTier-utilities.R' 'PointTier-class.R'
  'PointTier-accessors.R' 'PointTier-constructor.R'
  'PointTier-utilities.R' 'TextGrid-class.R'
  'TextGrid-accessors.R' 'TextGrid-constructor.R'
  'TextGrid-utilities.R' 'Tier-accessors.R' 'Tier-utilities.R'
  'finders.R' 'textgRid.R'

URL www.praat.org,
http://www.fon.hum.uva.nl/praat/manual/TextGrid.html

BugReports https://github.com/patrickreidy/textgRid

NeedsCompilation no

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findIntervals

Description
Find intervals according to various search criteria.

Usage
findIntervals(tier, pattern = "*", from = -Inf, to = Inf, at = numeric(), ...)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tier</td>
<td>An IntervalTier object.</td>
</tr>
<tr>
<td>pattern</td>
<td>A regular expression for matching interval labels. Default is '*' so that the search finds all intervals within [from, to].</td>
</tr>
<tr>
<td>from</td>
<td>A numeric, the earliest time from which to search for intervals. Default is -Inf so that the search includes the start of tier.</td>
</tr>
<tr>
<td>to</td>
<td>A numeric, the latest time to which to search for intervals. Default is Inf so that the search includes the end of tier.</td>
</tr>
<tr>
<td>at</td>
<td>A numeric, an exact time at which to find intervals. Default is numeric() so that intervals are searched within [from, to].</td>
</tr>
</tbody>
</table>

... optional arguments passed to grep.
findPoints

Details

Default behavior of findIntervals is to search for intervals within \([\text{from}, \text{to}]\). If the \(\text{at}\) argument is a non-empty numeric vector, then this default behavior is overridden, and the tier is searched only at the time given by \(\text{at}\).

Value

A data.frame whose rows correspond to the intervals found according to the search criteria, and whose columns are: \$\text{Index}, \$\text{StartTime}, \$\text{EndTime}, \$\text{Label},

See Also

intervalTier-class, grep

findPoints Find points within a PointTier.

Description

Find points according to various search criteria: e.g., that occur within a time range, whose labels match a pattern.

Usage

findPoints(tierL pattern \(= \ast\), \(\text{from} = -\text{Inf}\), \(\text{to} = \text{Inf}\), \(\ldots\))

Arguments

\begin{itemize}
\item \texttt{tier} A PointTier object.
\item \texttt{pattern} A regular expression for matching point labels. Default is \(\ast\) so that the search finds all points within \([\text{from}, \text{to}]\).
\item \texttt{from} A numeric, the earliest time from which to search for points. Default is \(-\text{Inf}\) so that the search includes the start of tier.
\item \texttt{to} A numeric, the latest time to which to search for points. Default is \(\text{Inf}\) so that the search includes the end of tier.
\item \(\ldots\) optional arguments passed to grep.
\end{itemize}

Value

A data.frame whose rows correspond to the points found according to the search criteria, and whose columns are: \$\text{Index}, \$\text{Time}, \$\text{Label}.

See Also

PointTier-class, grep
IntervalTier-accessors

Access the slots of IntervalTier objects.

Description
Functions for accessing the slots of an IntervalTier object.

Usage

intervalStartTimes(tier)
intervalEndTimes(tier)
intervalLabels(tier)

Arguments
tier An IntervalTier object.

See Also

IntervalTier-class, IntervalTier-constructor, Tier-accessors

IntervalTier-class

IntervalTier S4 class for Praat TextGrids.

Description
The IntervalTier class extends the Tier class. An IntervalTier object describes a sequence of non-overlapping labeled intervals. An interval’s label is typically the annotation of some contiguous portion of waveform data (e.g., a phonetic segment or word in speech data).

Slots
name A character string, the name of the Tier.
number An integer, the number of the Tier within the TextGrid.
startTimes A numeric vector, the start times of the intervals in the IntervalTier.
endTimes A numeric vector, the end times of the intervals in the IntervalTier.
labels A character vector, the labels of the intervals in the IntervalTier.

See Also

IntervalTier-constructor, IntervalTier-accessors, TextGrid-class, Tier-class
**IntervalTier-creator**

*Create an instance of the IntervalTier class.*

**Description**

An S4 generic and S4 methods for creating an `IntervalTier` object.

**Usage**

```r
IntervalTier(praatText, ...)  
```

## `S4` method for signature `character`

```r
IntervalTier(praatText)  
```

**Arguments**

- `praatText`: A character vector, the lines of text from a `.TextGrid` file that define an `IntervalTier`.
- `...`: Optional arguments for multiple dispatch (in development).

**Value**

A `IntervalTier` object. Values for the `tierName`, `tierNumber`, `startTime`, `endTime`, and `labels` slots are parsed automatically from the `praatText`.

**See Also**

`IntervalTier-class`, `IntervalTier-accessors`

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**PointTier-accessors**

*Access the slots of PointTier objects.*

**Description**

Functions for accessing the slots of a `PointTier` object.

**Usage**

```r
pointTimes(tier)  
pointLabels(tier)  
```

**Arguments**

- `tier`: A `PointTier` object.
PointTier-class

PointTier $S4$ class for Praat TextGrids.

Description

The PointTier class extends the Tier class. A PointTier object describes a sequence of labeled points in time. A point's label is typically the annotation of some event in waveform data (e.g., the onset of voicing in speech data).

Slots

name A character string, the name of the Tier.
number An integer, the number of the Tier within the TextGrid.
times A numeric vector, the times of the points in the PointTier.
labels A character vector, the labels of the points in the PointTier.

See Also

PointTier-class, PointTier-constructor, Tier-accessors

PointTier-constructor

Create an instance of the PointTier class.

Description

An S4 generic and S4 methods for creating an PointTier object.

Usage

PointTier(praatText, ...)

## S4 method for signature 'character'
PointTier(praatText)

Arguments

praatText A character vector, the lines of text from a .TextGrid file that define a PointTier.
... optional arguments for multiple dispatch (in development).
Value

A `PointTier` object. Values for the `tierName`, `tierNumber`, `times`, and `labels` slots are parsed automatically from the `praatText`.

See Also

`PointTier-class, PointTier-accessors`
Arguments

- `textGrid` An `TextGrid` object.

See Also

- `TextGrid-class`, `TextGrid-constructor`

Description

The `TextGrid` class extends the `list` class. A `TextGrid` object is essentially a list of `IntervalTier` and `PointTier` objects.

Slots

- `.Data` A list of `IntervalTier` and `PointTier` objects.
- `startTime` A numeric, the start time of the `TextGrid`.
- `endTime` A numeric, the end time of the `TextGrid`.

See Also

- `TextGrid-constructor`, `TextGrid-accessors`, `IntervalTier-class`, `PointTier-class`

Description

An S4 generic and S4 methods for creating a `TextGrid` object.

Usage

```r
TextGrid(textGrid, ...)
```

## S4 method for signature 'character'
```r
TextGrid(textGrid)
```

Arguments

- `textGrid` A character vector
- `...` optional arguments for multiple dispatch (in development).
Value

A \texttt{TextGrid} object.

Details for signature \texttt{c(textGrid = 'character')}

If \texttt{textGrid} is a string (i.e., a character vector with \texttt{length(textGrid)=1}), then it is assumed that the \texttt{textGrid} argument is the path to a .TextGrid file. Otherwise, the \texttt{textGrid} argument is assumed to be a character vector whose elements are the lines of some .TextGrid file.

See Also

\texttt{TextGrid-class, TextGrid-accessors}

Tier-accessors

Methods for Tier objects.

Description

Get the values of slots in a \texttt{Tier} object.

Usage

\texttt{tierName(tier)}

\texttt{tierNumber(tier)}

Arguments

\texttt{tier} \hspace{1cm} A \texttt{Tier} object.

See Also

\texttt{Tier-class}

Tier-class

\texttt{Tier S4 class for Praat TextGrids.}

Description

The \texttt{Tier} class is extended by the \texttt{PointTier} and \texttt{IntervalTier} classes. As such, the \texttt{Tier} class encapsulates only very general information that is common to both subtypes of tier-like object.

Slots

\texttt{name} A character string, the name of the Tier.

\texttt{number} An integer, the number of the Tier within the TextGrid.
See Also

IntervalTier-class, PointTier-class, TextGrid-class, Tier-accessors
Index

findIntervals, 2, 7
findPoints, 3, 7
grep, 3
intervalEndTimes
  (IntervalTier-accessors), 4
intervalLabels
  (IntervalTier-accessors), 4
intervalStartTimes
  (IntervalTier-accessors), 4
IntervalTier, 4, 5, 7–9
IntervalTier
  (IntervalTier-constructor), 5
IntervalTier,character-method
  (IntervalTier-constructor), 5
IntervalTier-accessors, 4
IntervalTier-class, 4
IntervalTier-constructor, 5
list, 8
pointLabels (PointTier-accessors), 5
PointTier, 5–9
PointTier (PointTier-constructor), 6
PointTier,character-method
  (PointTier-constructor), 6
PointTier-accessors, 5
PointTier-class, 6
PointTier-constructor, 6
pointTimes (PointTier-accessors), 5
TextGrid, 7–9
TextGrid (TextGrid-constructor), 8
textgrid, 7
textgrid, 7
TextGrid, 7–9
TextGrid-accessors, 7
TextGrid-class, 8
TextGrid-constructor, 8