Package ‘xmlr’

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Title Read, Write and Work with 'XML' Data
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Encoding UTF-8
Description 'XML' package for creating and reading and manipulating 'XML', with an object model based on 'Reference Classes'.
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BugReports https://github.com/Alipsa/xmlr/issues
Imports methods
Suggests testthat, knitr, rmarkdown
Collate 'xmlr.R' 'utils.R' 'AbstractClass.R' 'Content.R' 'Document.R'
'Text.R' 'Element.R' 'Stack.R' 'DomBuilder.R' 'Parser.R'
'xmlImporter.R' 'xmlConverter.R'

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R topics documented:

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Document-class

Reference Class representing a non instantiable class

Description

An abstract base class with some utility methods

Content-class

An abstract reference class representing content that can belong to an Element

Description

#' @field m_parent the parent (if any)

Document-class

Reference Class representing an XML document

Description

The base container for the DOM

Usage

## S4 method for signature 'Document'
as.vector(x)

## S4 method for signature 'Document'
as.character(x)
DomBuilder-class

Arguments

x  the object to convert

Details

Methods allow access to the root element as well as the DocType and other document-level information.

Methods (by generic)

- as.vector: as.vector(Document)
- as.character: as.character(Document)

Methods

getBaseURI() return the URI from which this document was loaded
setBaseURI(uri) Sets the effective URI from which this document was loaded

DomBuilder-class  Create a xmlr object tree based on parsing events

Description

Create a xmlr object tree based on parsing events

Methods

document() Event signalling parsing has completed
document(name) end element event; @param name the element name
startDocument() Event signalling parsing has begun
startElement(name, attributes) start element event; @param name the element name, @param attributes a named list of attributes
text(text) text event; @param text the character content of the Text node
**Description**

An XML element. Methods allow the user to get and manipulate its child elements and content, directly access the element’s textual content, and manipulate its attributes.

**Usage**

```r
## S4 method for signature 'Element'
as.vector(x)
```

```r
## S4 method for signature 'Element'
as.character(x)
```

**Arguments**

- `x` the object to convert

**Methods (by generic)**

- `as.vector`: `as.vector(Element)`
- `as.character`: `as.character(Element)`

**Fields**

- `name` The local name of the element
- `contentList` all the children of this element
- `attributeList` a list of all the attributes belonging to this element

**Methods**

- `addAttributes(attributes)` Add the supplied attributes to the attributeList of this Element
- `addContent(content)` Appends the child to the end of the content list. return the parent (the calling object)
- `contentIndex(content)` Find the position of the content in the contentList or -1 if not found
- `getAttribute(name)` Get an attribute value
- `getAttributes()` Get the list of attributes
- `getChildren()` Get all the child Elements belong to this Element
- `getContent()` Returns the full content of the element as a List that may contain objects of type Text, Element, Comment, ProcessingInstruction, CDATA, and EntityRef
- `getName()` Return the name of this Element
**isRc**

`isRc` (is reference class) is a common utility function used to check if an object belongs to a specific class. This function is similar to `isS4()` in R, which checks for S4 classes.

### Description

Common utility functions

### Usage

```r
isRc(x, clazz = "refClass")
```

### Arguments

- **x**: the object to check
- **clazz**: the name of the class e.g. "Element" for the Element class. Optional, if omitted it checks that the object is a reference class

### Value

A boolean indicating whether the object `x` belongs to the class or not

### Functions

- `isRc`: Check if the object is a reference class, similar to `isS4()`.

**getText()** Return the text content of this element if any

**hasAttributes()** return TRUE if this element has any attributes, otherwise FALSE

**hasChildren()** Return TRUE if this element has any child Element nodes

**hasContent()** return TRUE if this element has any content, otherwise FALSE

**hasText()** Return TRUE if this element has a Text node

**removeContent(content)** Remove the specified content from this element

**removeContentAt(index)** Remove the content at the given index and return the content that was removed

**setAttribute(name, value)** Add or replace an attribute, parameters will be converted to characters

**setAttributes(attributes)** Replace the attributes with this named list, NULL or empty list will remove all attributes, all values will be converted to characters

**setName(name)** Set the name of this Element

**setText(text)** Replace all content with the text supplied
Parser-class

Parse an xml string and create sax like events

Description


Stack-class

A general purpose linked stack

Description

A general purpose linked stack

Fields

size  the size of the stack (number of elements in the stack)

stackNode  an environment containing the current element and the one under

Methods

peek()  Get the top element from the stack without changing it

pop()  Pull the top element from the stack removing it from the stack

push(val)  Add an element to the top of the stack

size()  Get the current size of the stack

Text-class

Reference class representing text content

Description

Reference class representing text content

as.vector for Text classes

as.character for Text classes

Usage

## S4 method for signature 'Text'
as.vector(x)

## S4 method for signature 'Text'
as.character(x)
xmlImporter

Arguments

x the object to convert

Details

An XML character sequence. Provides a modular, parentable method of representing text.

Methods (by generic)

• as.vector: as.vector(Text)
• as.character: as.character(Text)

xmlImporter XML import functions

Description

XML import functions

Usage

parse.xmlstring(xml)

parse.xmlfile(fileName)

Arguments

xml an xml character string to parse
fileName the name of the xml file to parse

Value

a Document object

Functions

• parse.xmlstring: create a Document from a character string
• parse.xmlfile: create a Document from a xml file
xmlr
xmlr

Description

A package for creating and reading and manipulating XML inspired by JDOM (http://www.jdom.org/), implemented with Reference Classes.

Examples

```r
library("xmlr")
doc <- Document$new()
root <- Element$new("table")
root$setAttribute("xmlns", "http://www.w3.org/TR/html4/")
doc$setRootElement(root)

root$addContent(
  Element$new("tr")
  $addContent(Element$new("td")$setText("Apples"))
  $addContent(Element$new("td")$setText("Bananas"))
)
table <- doc$getElementById("table")
stopifnot(table$getName() == "table")
stopifnot(table$getAttribute("xmlns") == "http://www.w3.org/TR/html4/")

children <- table$getElementById("tr")$getChildren()
stopifnot(length(children) == 2)
stopifnot(children[[1]]$getText() == "Apples")
stopifnot(children[[2]]$getText() == "Bananas")

# you can also parse character strings (or parse a file using parse.xmlfile(fileName))
doc <- parse.xmlstring("<foo><bar><baz val='the baz attribute'/></bar></foo>")
```

xmlrToDataFrame

Create a data frame from a xmlr Element

Description

This is a convenience method to take all the children of the given Element and create a data frame based on the content of each child where each child constitutes a row and the attributes or elements (including text) will constitute the columns. It assumes a homogeneous structure and the column names are taken from the first child.

Usage

```r
xmlrToDataFrame(element)
```
xmlrToDataFrame

Arguments
   element  the element to convert

Value
   a data frame
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