

Package ‘r2lh’

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Type Package

Title R to LaTeX and HTML

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Description generate univariate and bivariate analyses in LaTeX or HTML formats

License GPL (>= 2)

Lazyload yes

Depends methods

URL <http://www.r-project.org>

Collate functions.R logical.R factor.R ordered.R discrete.R continuous.R rtlu.R rtlbDisplay.R rtlb.R

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 examCheating

 ~ Data: Exam Cheating at French University ~

Description

This data set results from an enquiry led by some second year Students from the Paris X - Nanterre University. They built up a questionnaire to measure fraud during exams at the University. This is not a valid questionnaire, just an exercise done by some students on a topic they chose -to make learning statistics more interactive (more fun ?)-.

Usage

```
data(examCheating)
```

Format

A data frame with 314 observations on the following 20 variables.

Id Line identification

Age *What is your age ?*

Gender *What is your gender ?*

YearOfStudy *What is your studying year ?*

Note: In European University, the studies are split in two cycles. The first one called "Licence" lasts three years (L1, L2 then L3). The second one called "Master" (M1 then M2) comes after the licence and takes two years.

Field *What do you study ?*

Note:LEA is "Foreign language", SEGMI is "Math and Economics", SJAP is "Law", SSA is "Social and Administrative Sciences", STAPS is "Sports"

RepeatingYear *Did you ever take a class twice ?*

In France, a student who failed at the final exam will be proposed to take the same year of study once again.

Bac *What grade did you get at Bac ?*

Bac is a french national exam that takes place between high school and university. The possible results are Fail Remedial exam Pass Fairly good Good Very good Summa cum laude

Peep *Did you ever peep during exams ?*

Whispering *Did you ever whisper to neighbors during exams ?*

PaperSwapping *Did you ever swap rough paper during exams ?*

CribSheet *Did you ever use crib sheet ?*

SMS *Did you ever send SMS during exams ?*

LapCopying *Did you ever lap copy during exams ?*

PaperKeeping *Did you ever keep your paper ?*

PreparingRoom *Did you ever prepare the exam room or the toilets before exams ?*

ExamStealing *Did you ever steal the exam subject before the exam ?*

Other *Did you use some other way of cheating ?*

BacCheat *Did you cheat during the Bac ?*

HighSchoolCheat *Did you cheat during you high school studies ?*

CheatScore Sum of all the cheating variables with convention Never=0 Rarely=1 Sometimes=2
Often=3 Always=4

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Author (students)

L2 (2007-2008) groups TD1 and TD2

English correction

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References

LaTeX web site <http://www.latex-project.org/>
Data are available on line: <http://christophe.genolini.free.fr/EPO/EPO2007-Fraude.php>

See Also

[r2latexUniv-package](#), [r2lh-package](#), [r2latexUniv](#), [r2latexBiv](#), [r2htmlUniv](#), [r2htmlBiv](#), [Sweave](#),
[latex](#)

Examples

```
data(examCheating)
str(examCheating)
```

r2hb

~ *Function: R to HTML, Bivariate analysis* ~**Description**

r2htmlBiv (or r2hb in short) performs some bivariate analyses, then generates code to be included in a HTML document in order to print out the analyses on a Web page.

Usage

```
r2hb(formula, fileOut="", textBefore="", textAfter="", graphDir="graphBiv", graphName="V", type="png", displayStyle="compact")
r2htmlBiv(formula, fileOut="", textBefore="", textAfter="", graphDir="graphBiv", graphName="V", type="png", displayStyle="compact")
```

Arguments

formula	[variable~variable] or [variable~data.frame] : contains the data to analyse. In all the following, the left part will be called Y, the right part will be X.
fileOut	[character] name of the output file in which the HTML summary will be saved. If empty, the HTML code is printed on screen.
textBefore	[character] or [vector(character)] : before printing a variable analysis, r2hb can write a text. If X is a single variable, textBefore should be of length 1. If X is a data.frame, textBefore can have same length as the number of columns of the data.frame (this lets the user write a specific introduction for each variable), or can be of length 1. In this case, it is recycled. See examples for details.
textAfter	[character] or [vector(character)] : same as textBefore but the text is printed after the variable analysis. See textBefore and examples for details.
graphDir	[character] : directory used to save the graphs generated by the analyses.
graphName	[character] or [vector(character)] : prefix for the graph names. If empty, the graph names are V1 to V'length(data.frame)'
type	[character] : type of plotting device used to export the graphics. Can be Windows metafile, PNG, JPEG, BMP (Windows bitmap format), TIFF, PostScript or PDF.
displayStyle	[numeric] or [vector(numeric)] : r2hb proposes two different ways of displaying the results. <p>The first one is compact, it displays all the results on two lines. If the number of modalities of X is too big, this method could draw tables that outfit the page. In this case, a second display (on three lines, less compact but higher) is used.</p> <p>The switch (compact/expanded) is done automatically by r2hb according to the number of modalities of X: when it is lower than displayStyle, the compact style is used. When it is greater or equal, the expanded style is used.</p> <p>If X is a data.frame, displayStyle can have the same length as X, or can be of length 1 (and be recycled).</p>

`limDiscreteY` [numeric]: r2hb distinguishes two kinds of numeric variables: discrete designates numeric variables with only a few modalities, continuous designates numeric variables with many modalities. For the variable Y, the limit between 'few' and 'many' can be fixed by the user through the `limDiscreteY` argument. By setting `limDiscreteY` to 5, the user will ask r2hb to consider all the numeric variables with more than 5 modalities as continuous and all the variables with 5 modalities or less as discrete.
The default value for `limDiscreteY` is 10.

`limDiscreteX` [numeric] or [vector(numeric)]: same as `limDiscreteY`. If X is a data.frame, `limDiscreteX` can have the same length as X or can be of length 1 (and is recycled).

Details

r2hb performs some basic analyses, then generates code to be included in a HTML document in order to print out the analyses in a Web page.

r2hb performs the analyses automatically according to the data class. It considers 5 classes: nominal with 2 modalities, nominal with 3 modalities or more, ordered, discrete and continuous (see the description of `limDiscreteY` for details on discrete and continuous).

The analysis of the variable depends on the class of Y and X which gives 25 possible combinations. We will not give a description here, all of them are presented in the pdf file [/library/r2lh/doc/r2lhOutput.pdf](#).

They can be divided in two categories. First (on the top of the tabular) are descriptive analyses:

1. table: absolute and relative frequency.
2. summary: mainly when Y is continuous and X has few modalities.
3. graphical representation: barplot or boxplot for each modalities of X, mosaic plot, scatter plot, density lines according to the type of the variable.

On the second part of the tabular are all the informations related to a potential link between Y and X.

1. test: khi2, Fisher exact test, Student's T, ANOVA, Wilcoxon, Kruskal & Wallis, Spearman correlation, Pearson correlation, Odds Ratio and Relative Risk, depending on the classes of Y and X. Note that as many tests as possible are run. For example, if Y is nominal and X is ordered, X can be considered as a factor (khi2 and Fisher exact test) but also as a discrete variable (Wilcoxon).
2. graphical diagnostic: the test presented might not be all valid. Some graphical diagnostic (check for normality) are presented to let the user decide which test is more relevant.

The wide display gives :

```
+-----+
| 1 | 2 | 3 |
+-----+
| 4 | 5 |
+-----+
```

The long display :

```
+-----+
|  1  |
+-----+
| 2 | 3 |
+-----+
| 4 | 5 |
+-----+
```

If `X` is a `data.frame`, `r2hb` runs the analyses on every column.

See </library/r2lh/doc/r2lhOutput.pdf> for display detail.

Value

`r2hb` generates HTML code and either prints it on the screen, or saves it in a file. It also generates several graphs, optionally in a different directory.

Classical usage

The use of `r2hb` goes through the following steps:

- Step 1. Load the data (usually, a `data.frame`).
- Step 2. Optionally, set some variables as ordered.
- Step 3. Run `r2hb(Y~dataFrame, "fileOut.html")`.

See examples of application.

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References

HTML web site <http://www.latex-project.org/>

Data are available on line: <http://christophe.genolini.free.fr/EP0/EP02007-Fraude.php>

See Also

[r2hMainFile](#), [r2htmlUniv](#), [r2htmlUniv-package](#), [examCheating](#)

Examples

```

#####
#   R to HTML, Bivariate Analyses   #
#       Artificial examples         #
#       Single variable             #
#####

### Create some data
V1 <- factor(LETTERS[floor(runif(50,1,4))])
V2 <- rnorm(50,1,1)<0
V3 <- ordered(LETTERS[floor(runif(50,1,4))])

### Create a directory for the output
if(!file.exists("tmp/r2hbExample",recursive=TRUE)){dir.create("tmp/r2hbExample",recursive=TRUE)}else{}
setwd("tmp/r2hbExample")

### Execute r2hb
r2hb(V1~V2,fileOut="first.html",textBefore="<H2>Variables V1, V2, V3</H2>",graphName="Gr1",type="png")
r2hb(V2~V1,fileOut="second.html",graphName="Gr2",type="png")
r2hb(V3~V1,fileOut="third.html",textBefore="This is V3 vs. V1",graphDir="P",graphName="Gr3",type="png",displayS
r2hMainFile(text="
<LU>
<LI><A HREF='first.html'>First example</A></LI>
<LI><A HREF='second.html'>Second example</A></LI>
<LI><A HREF='third.html'>Third example</A></LI>
</LU>
")
setwd("../")

```

r2hMainFile

~ *Generation of HTML main document* ~**Description**

This function generates an HTML main document designed to include links to some files built by r2hu or r2hb.

Usage

```
r2hMainFile(fileOut = "main.html", text="<OBJECT data='univ.html' type='text/html'></OBJECT>", sweave=f
```

Arguments

fileOut	characters; name of the main document.
text	text to be included in the HTML document, between the '<BODY>' and '</BODY>'
sweave	logical; if TRUE, the main document is designed to be compiled with Sweave.

Details

r2hMainFile generates an HTML master file ready to include links to some files built by r2hu or r2hb.

Value

A HTML file ("main.html" by default).

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References

HTML web site <http://www.w3.org/TR/html/>
 Data are available on line: <http://christophe.genolini.free.fr/EP0/EP02007-Fraude.php>

See Also

[r2hu](#), [r2hb](#), [r2lh-package](#), [examCheating](#), [Sweave](#)

Examples

```
#####
# R to HTML, Main file generation #
#           Examples             #
#           r2hMainFile         #
#####

### Creates a file named "main.html" that includes "univ.html"
if(!file.exists("tmp")){dir.create("tmp")};setwd("tmp")
r2hMainFile()
setwd("../..")
```

 r2hu

~ Function: R to HTML, Univariate analysis ~

Description

r2htmlUniv (r2hu in short) performs some basic analyses, then generates code to be included in a HTML document.

Usage

```
r2hu(x, fileOut="", textBefore="", textAfter="", graphDir="graphUniv", graphName="V", type="png", limDiscrete=10)
r2htmlUniv(x, fileOut="", textBefore="", textAfter="", graphDir="graphUniv", graphName="V", type="png", limDiscrete=10)
```

Arguments

x	[data.frame] or [vector] : contains the data to analyse.
fileOut	[character]; name of the output file in which the HTML summary will be saved. If empty, the HTML code is printed on screen.
textBefore	[character] or [vector(character)] : before printing a variable analysis, r2hu can write a text. If r2hu is applied on a single variable, textBefore should be of length 1. If r2hu is applied on a data.frame, textBefore can have same length as the number of columns of the data.frame (this lets the user write a specific introduction for each variable), or can be of length 1. In this case, it is printed before each variable analysis. See examples for details.
textAfter	[character] or [vector(character)] : after printing a variable analysis, some text can be added. See textBefore and examples for details.
graphDir	[character] : directory used to save the graphs generated by the analyses.
graphName	[character] or [vector(character)] : prefix for the graph names. If empty, the graph names are V1 to V length(data.frame)
type	[character] : type of plotting device used to export the graphics. Can be Windows metafile, PNG, JPEG, BMP (Windows bitmap format), TIFF, PostScript or PDF.
limDiscrete	r2hu distinguishes two kinds of numeric : discrete designates numeric variables with only a few modalities, continuous designates numeric variables with many modalities. The limit between 'few' and 'many' can be fixed by the user through the argument limDiscrete. By setting limDiscrete to 5, the user will ask r2hu to consider all the numeric variables with more than 5 modalities as continuous and all the variables with less than 5 modalities as discrete. The default value for limDiscrete is 10.

Details

r2hu performs some basic analyses, then generates code to be included in a HTML document.

r2hu performs the analyses automatically according to the data class. It considers four classes. The analysis of the variable depends on the class:

1. factor, character and logical: Frequency and barplot
2. ordered: Frequency, quartile and barplot
3. numeric discrete: Frequency, mean, variance, quartile, boxplot and barplot
4. numeric continuous: Mean, variance, quartile, boxplot and histogram.

On a data.frame, r2hu runs the analyses on every column.

See [/library/r2lh/doc/r2lhOutput.pdf](#) for display details.

Value

r2hu generates HTML code and either prints it on the screen, or saves it in a file. It also generates several graphs, optionally in a different directory.

Classical usage

The use of r2hu goes through the following steps:

- Step 1. Load the data (usually, a `data.frame`).
- Step 2. Optionally, set some variables as ordered.
- Step 3. Run `r2hu(dataFrame, "fileOut.html")`.

See examples of application.

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References

HTML web site <http://www.w3.org/TR/html/>
 Data are available on line: <http://christophe.genolini.free.fr/EPO/EPO2007-Fraude.php>

See Also

[r2hMainFile](#), [r2htmlBiv](#), [r2latexUniv-package](#), [examCheating](#), [Sweave](#), [latex](#)

Examples

```
#####
# R to HTML, Univariate Analyses #
#           Examples           #
#       r2hu single variable     #
#####

#####

### Create some data
V1 <- factor(LETTERS[floor(runif(50,1,4))])
V2 <- rnorm(50,1,1)<0
V3 <- ordered(LETTERS[floor(runif(50,1,4))])
```

```
### Create a directory for the output
if(!file.exists("tmp")){dir.create("tmp")};setwd("tmp")
if(!file.exists("r2huExample")){dir.create("r2huExample")};setwd("r2huExample")
```

```
### Execute r2hu
r2hu(V1,fileOut="first.html",textBefore="<h2>Variable 1 to 3</h2>",graphName="V1")
r2hu(V2,fileOut="second.html",graphName="V2")
r2hu(V3,fileOut="third.html",textBefore="This is variable 3",graphDir="P")
r2hMainFile(text="
<LU>
<LI><A HREF='first.html'>First example</A></LI>
<LI><A HREF='second.html'>Second example</A></LI>
<LI><A HREF='third.html'>Third example</A></LI>
</LU>
")
```

```
#####
# R to HTML, Univariate Analyses #
# Real examples #
# r2hu data.frame #
#####
```

```
#####
##### Step 1: Create the data
```

```
data(examCheating)
str(examCheating)
```

```
#####
##### Step 2: ordering variable
```

```
examCheating$YearOfStudy <- ordered(examCheating$YearOfStudy,levels=c("L1","L2","L3","M1","M2"))
examCheating$Bac <- ordered(examCheating$Bac,levels=c("Remedial exam","Pass","Fairly good","Good","Very good","S
for(iColumn in 8:17){
  examCheating[,iColumn] <- ordered(examCheating[,iColumn],levels=c("Never","Rarely","Sometimes","Often","Alwa
})
str(examCheating)
```

```
#####
##### Step 3: running r2hu
```

```
### Preparation of textBefore, for transition between variable
```

```
textBefore <- paste("<h3>",names(examCheating)[c(2:5,18:20)],"</h3>",sep="")
```

```
text <- "
<h2>Survey</h2>
<ul>
  <li> What is your age?</li>
  <li> What is your gender?</li>
```

```

    <li> What is your level?</li>
    <li> What is your field?</li>
    <li> Did you cheat at Bac?</li>
    <li> Did you cheat high school?</li>
    <li> Cheating score</li>
  </ul>

<h2>Univariate analysis</h2>
  <OBJECT data = 'ExamCheat-univ.html' type = 'text/html'></OBJECT>

<h2>More information?</h2>
For a detailed analysis, see
http://christophe.genolini.free.fr/EP0/2007\_Fraude/EP02007-Fraude-Rapport.pdf

### We can run r2hu
r2hu(examCheating[,c(2:5,18:20)],fileOut="ExamCheat-univ.html",textBefore=textBefore)
r2hMainFile("ExamCheat-main.html",text=text)
setwd("../..")

### Then open ExamCheat-main.html in your browser. It is ready !

```

r2lb

~ Function: R to LaTeX, Bivariate analysis ~

Description

r2latexBiv (r2lb in short) performs some bivariate analyses, then generates code to be included in a LaTeX document in order to print out the analyses in a (so nice!) LaTeX way.

Usage

```

r2lb(formula,fileOut="",textBefore="",textAfter="",graphDir="graphBiv",graphName="V",type="png",di
r2latexBiv(formula,fileOut="",textBefore="",textAfter="",graphDir="graphBiv",graphName="V",type="p

```

Arguments

formula	[variable~variable] or [variable~data.frame]: contains the data to analyse. In all the following, the left part will be called Y, the right part will be X.
fileOut	[character] name of the output file in which the LaTeX summary will be saved. If empty, the LaTeX code is printed on screen.
textBefore	[character] or [vector(character)]: before printing a variable analysis, r2lb can write a text. If X is a single variable, textBefore should be of length 1. If X is a data.frame, textBefore can have same length as the number of columns of the data.frame (this lets the user write a specific introduction for each variable), or can be of length 1. In this case, it is recycled. See examples for details.

textAfter	[character] or [vector(character)] : same as textBefore but the text is printed after the variable analysis. See textBefore and examples for details.
graphDir	[character] : directory used to save the graphs generated by the analyses.
graphName	[character] or [vector(character)] : prefix for the graph names. If empty, the graph names are V1 to V'length(data.frame)'
type	[character] : type of plotting device used to export the graphics. Can be Windows metafile, PNG, JPEG, BMP (Windows bitmap format), TIFF, PostScript or PDF.
displayStyle	[numeric] or [vector(numeric)] : r2lb proposes two different ways of displaying the results. The first one is compact, it displays all the results on two lines. If the number of modalities of X is too big, this method could draw tables that outfit the page. In this case, a second display (on three lines, less compact but higher) is used. The switch (compact/expanded) is done automatically by r2lb according to the number of modalities of X: when it is lower than displayStyle, the compact style is used. When it is greater or equal, the expanded style is used. If X is a data.frame, displayStyle can have the same length as X, or can be of length 1 (and be recycled).
limDiscreteY	[numeric] : r2lb distinguishes two kinds of numeric variables: discrete designates numeric with only a few modalities, continuous designates numeric with many modalities. For the variable Y, the limit between 'few' and 'many' can be fixed by the user through the limDiscreteY argument. By setting limDiscreteY to 5, the user will ask r2lb to consider all the numeric variables with more than 5 modalities as continuous and all the variables with 5 modalities or less as discrete. The default value for limDiscreteY is 10.
limDiscreteX	[numeric] or [vector(numeric)] : same as limDiscreteY. If X is a data.frame, limDiscreteX can have the same length as X or can be of length 1 (and is recycled).

Details

r2lb performs some basic analyses, then generates code to be included in a LaTeX document in order to print out the analyses in a (so nice!) LaTeX way.

r2lb performs the analyses automatically according to the data class. It considers 5 classes: nominal with 2 modalities, nominal with 3 modalities or more, ordered, discrete and continuous (see the description of limDiscreteY for details on discrete and continuous).

The analysis of the variable depends on the class of Y and X which gives 25 possible combinations. We will not give a description here, all of them are presented in the pdf file [/library/r2lh/doc/r2lhOutput.pdf](#).

They can be divided in two categories. First (on the top of the tabular) are descriptive analyses:

1. table: absolute and relative frequency.
2. summary: mainly when Y is continuous and X has few modalities.
3. graphical representation: barplot or boxplot for each modalities of X, mosaic plot, scatter plot, density lines according to the type of the variable.

On the second part of the tabular are all the informations related to a potential link between Y and X.

1. test: khi2, Fisher exact test, Student's T, ANOVA, Wilcoxon, Kruskal & Wallis, Spearman correlation, Pearson correlation, Odds Ratio and Relative Risk, depending on the classes of Y and X. Note that as many tests as possible are run. For example, if Y is nominal and X is ordered, X can be considered as a factor (khi2 and Fisher exact test) but also as a discrete variable (Wilcoxon).
2. graphical diagnostic: the test presented might not be all valid. Some graphical diagnostic (check for normality) are presented to let the user decide which test is more relevant.

The wide display gives :

```
+-----+
| 1 | 2 | 3 |
+-----+
| 4 | 5 |
+-----+
```

The long display :

```
+-----+
| 1 |
+-----+
| 2 | 3 |
+-----+
| 4 | 5 |
+-----+
```

If X is a `data.frame`, r2lb runs the analyses on every column.

See </library/r2lh/doc/r2lhOutput.pdf> for display details.

Value

r2lb generates LaTeX code and either prints it on the screen, or saves it in a file. It also generates several graphs, optionally in a different directory.

Classical usage

The use of r2lb goes through the following steps:

- Step 1. Load the data (usually, a `data.frame`).
- Step 2. Optionally, set some variables as ordered.
- Step 3. Run `r2lb(Y~dataFrame, "fileOut.tex")`.

See examples of application.

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References

LaTeX web site <http://www.latex-project.org/>
 Data are available on line: <http://christophe.genolini.free.fr/EPO/EPO2007-Fraude.php>

See Also

[r2lMainFile](#), [r2lu](#), [r2latexUniv-package](#), [examCheating](#), [Sweave](#), [latex](#)

Examples

```
#####
# R to LaTeX, Bivariate Analyses #
# Artificial examples #
# Single variable #
#####

### Create some data
V1 <- factor(LETTERS[floor(runif(50,1,4))])
V2 <- rnorm(50,1,1)<0
V3 <- ordered(LETTERS[floor(runif(50,1,4))])

### Create a directory for the output
if(!file.exists("tmp/r2lbExample",recursive=TRUE)){dir.create("tmp/r2lbExample",recursive=TRUE)}else{}
setwd("tmp/r2lbExample")

### Execute r2lb
r2lb(V1~V2,fileOut="first.tex",textBefore="\\section{Variables V1, V2, V3}",graphName="Gr1",type="postscript")
r2lb(V2~V1,fileOut="second.tex",graphName="Gr2",type="postscript")
r2lb(V3~V1,fileOut="third.tex",textBefore="This is V3 vs. V1",graphDir="P",graphName="Gr3",type="postscript",di
r2lMainFile(text="\\input{first.tex}\\n\\input{second.tex}\\n\\input{third.tex}")
setwd("../..")
```

Description

Package: r2lh
Type: Package
Version: 0.7
Date: 2011-07-07
License: GPL (>= 2)

Details

r2lBiv performs some bivariate analyses, then generates code to be included in a LaTeX document in order to print out the analyses in a (so nice!) LaTeX way. See `vignette(r2lh-exampleOfOutput)` for display details.

r2lBiv, in real context...

Bob is working VERY hardly on World of Warcraft... John, his boss, gets in his office:

- Bob, I have some urgent work for you
- ...
- Bob, I'm talking to you
- Huuu ?
- I said, I have some urgent work.
- Well, John, I am quite busy at the moment.
- It is our major client.
- Again ?
- Yep. He's very happy with the univariate analysis you gave him last week. He's now asking for the bivariate analysis.
- Hey, I am still a senior statistician, give that to a rookie!
- He is still our major client, and now, he loves you !
- I need four weeks.
- I give you one.
- I said four so you are supposed to give me two !
- You ask four, that means you need two, I give you one...

Once more, Bob pouts, internally smiling, and starts again kicking some orc ass. He knows that running `r2lb` will take him 2 or 3 minutes... As long as John does not know about r2lb, life is beautiful.

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References

LaTeX web site <http://www.latex-project.org/>
Data are available on line: <http://christophe.genolini.free.fr/EPO/EPO2007-Fraude.php>

See Also

[r2latexUniv-package](#), [r2latexUniv](#), [r2latexBiv](#), [r2htmlUniv](#), [r2htmlBiv](#), [r2lMainFile](#), [r2hMainFile](#),
[examCheating](#), [Sweave](#), [latex](#)

r2lMainFile ~ *Generation of LaTeX main document* ~

Description

This function generates a LaTeX main document designed to include some files built by r2lu or r2lb.

Usage

```
r2lMainFile(fileOut = "main.tex",text="\input{univ.tex}",sweave=FALSE)
```

Arguments

fileOut	characters; name of the main document.
text	text to be included in the LaTeX document, between the <code>'\begin{document}'</code> and <code>'\end{document}'</code> macros.
sweave	logical; if TRUE, the main document is designed to be compiled with Sweave.

Details

r2lMainFile generates a LaTeX master file or a Sweave file ready to include some files built by r2lu or r2lb.

Value

A LaTeX or a Sweave file ("main.tex" by default).

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References

LaTeX web site <http://www.latex-project.org/>
 Data are available on line: <http://christophe.genolini.free.fr/EPO/EP02007-Fraude.php>

See Also

[r2lu](#), [r2lb](#), [r2lh-package](#), [examCheating](#), [Sweave](#), [latex](#)

Examples

```
#####
# R to LaTeX, Main file generation #
#           Examples           #
#           r2lMainFile       #
#####

### Creates a Sweave file
text <- "
\\maketitle
\\tableofcontents

<<>>=
data(examCheating)
@

\\section{Univariate analysis}

<<>>=
r2lu(examCheating$CheatScore,fileOut='ExamCheat-univ1.tex')
```

```

@
\\input{ExamCheat-univ1.tex}

\\section{Bivariate analysis}

<<>=
#r2lb(examCheating$CheatScore~examCheating$Sexe, fileOut='ExamCheat-biv1.tex')
@
\\input{ExamCheat-biv1.tex}
"

if(!file.exists("tmp/sweave",recursive=TRUE)){dir.create("tmp/sweave",recursive=TRUE)}else{}
setwd("tmp/sweave")

r2lMainFile(fileOut="main.Rnw",text=text,sweave=TRUE)
Sweave("main.Rnw")
setwd("../..")

```

r2lu ~ *Function: R to LaTeX, Univariate analysis* ~ ~ *Function: R to HTML, Univariate analysis* ~

Description

r2latexUniv (r2lu in short) performs some basic analyses, then generates code to be included in a LaTeX document to print the analyses in a (so nice!) LaTeX way.

Usage

```

r2lu(x, fileOut="", textBefore="", textAfter="", graphDir="graphUniv", graphName="V", type="png", limDisc
r2latexUniv(x, fileOut="", textBefore="", textAfter="", graphDir="graphUniv", graphName="V", type="png",

```

Arguments

x	[data.frame] or [vector] : contains the data to analyse.
fileOut	[character]; name of the output file in which the LaTeX summary will be saved. If empty, the code is printed on screen.
textBefore	[character] or [vector(character)] : before printing a variable analysis, some text can be inserted. If (r2lu is applied on a single variable, textBefore should be of length 1. If the function is applied on a data.frame, textBefore can have same length as the number of columns of the data.frame (this lets the user write a specific introduction for each variable), or can be of length 1. In this case, it is printed before each variable analysis. See examples for details.
textAfter	[character] or [vector(character)] : after printing a variable analysis, some text can be added. See textBefore and examples for details.
graphDir	[character] : directory used to save the graphs generated by the analyses.

graphName	[character] or [vector(character)] : prefix for the graph names. If empty, the graph names are V1 to V length(data.frame)
type	[character] : type of plotting device used to export the graphics. Can be Windows metafile, PNG, JPEG, BMP (Windows bitmap format), TIFF, PostScript or PDF.
limDiscrete	r2lu distinguish two kinds of numeric : discrete designates numeric variables with only a few modalities, continuous designates numeric variables with many modalities. The limit between 'few' and 'many' can be fixed by the user via the limDiscrete argument. By setting limDiscrete to 5, the user will ask r2lu to consider all the numeric variables with 5 modalities or more as continuous and all the variables with less than 5 modalities as discrete. The default value for limDiscrete is 10.

Details

r2lu performs some basic analyses, then generates a code to be included in a LaTeX document to print the analyses in a (so nice!) LaTeX way.

r2lu performs the analyses automatically according to the data class. They consider four classes. The analysis of the variable depends on the class:

1. factor, character and logical: Frequency and barplot
2. ordered: Frequency, quartile, barplot
3. numeric discrete: Frequency, mean, variance, quartile, boxplot and barplot
4. numeric continuous: Mean, variance, quartile, boxplot and histogram.

On a data.frame, r2lu runs the analyses on every column.

See </library/r2lh/doc/r2lhOutput.pdf> for display details.

Value

r2lu generate LaTeX code and either print it on the screen, or save it in a file. It also generate several graphs, optionally in a different directory.

Classical usage

The use of r2lu goes through the following steps:

- Step 1. Load the data (usually, a data.frame).
- Step 2. Optionally, set some variables as ordered.
- Step 3. Run `r2lu(dataFrame, "fileOut.tex")`.

See examples of application.

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References

LaTeX web site <http://www.latex-project.org/>
Data are available on line: <http://christophe.genolini.free.fr/EPO/EP02007-Fraude.php>

See Also

[r2lMainFile](#), [r2latexBiv](#), [r2latexUniv-package](#), [examCheating](#), [Sweave](#), [latex](#)

Examples

```
#####
# R to LaTeX, Univariate Analyses #
# Artificial examples #
# Single variable #
#####

### Create some data
V1 <- factor(LETTERS[floor(runif(50,1,4))])
V2 <- rnorm(50,1,1)<0
V3 <- ordered(LETTERS[floor(runif(50,1,4))])

### Create a directory for the output
if(!file.exists("tmp/r2luExample",recursive=TRUE)){dir.create("tmp/r2luExample",recursive=TRUE)}else{}
setwd("tmp/r2luExample")

### Execute r2lu
r2lu(V1,fileOut="first.tex",textBefore="\\section{Variable 1 to 3}",graphName="V1")
r2lu(V2,fileOut="second.tex",graphName="V2")
r2lu(V3,fileOut="third.tex",textBefore="This is variable 3",graphDir="P")
r2lMainFile(text="\\input{first.tex}\\n\\input{second.tex}\\n\\input{third.tex}")

#####
# R to LaTeX, Univariate Analyses #
# Real examples #
# r2lu data.frame #
#####

#####
##### Step 1: Create the data

data(examCheating)
str(examCheating)
```

```
#####
##### Step 2: ordering variable

examCheating$YearOfStudy <- ordered(examCheating$YearOfStudy,levels=c("L1","L2","L3","M1","M2"))
examCheating$Bac <- ordered(examCheating$Bac,levels=c("Remedial exam","Pass","Fairly good","Good","Very good","S
for(iColumn in 8:17){
  examCheating[,iColumn] <- ordered(examCheating[,iColumn],levels=c("Never","Rarely","Sometimes","Often","Alwa
})
str(examCheating)

#####
##### Step 3: running r2lu

### Preparation of textBefore, for transition between variables

textBefore <- paste("\\subsection{" ,names(examCheating)[c(2:5,18:20)],"}",sep="")

text <- "\\maketitle
\\tableofcontents
\\section{Survey}
  \\begin{enumerate}
    \\item What is your age?
    \\item What is your gender?
    \\item What is your level?
    \\item What is your field?
    \\item Did you cheat at Bac?
    \\item Did you cheat high school?
    \\item Cheating score
  \\end{enumerate}
\\section{Univariate analysis}
  \\input{ExamCheat-univ.tex}

\\section{More information?}
For a detailed analysis, see
http://christophe.genolini.free.fr/EP0/2007\_Fraude/EP02007-Fraude-Rapport.pdf

### We can run r2lu
r2lu(examCheating[,c(2:5,18:20)],fileOut="ExamCheat-univ.tex",textBefore=textBefore)
r2lMainFile("ExamCheat-main.tex",text=text)
setwd("../..")

### Then compile ExamCheat-main.tex twice. It is ready !
```

Description

Package: r2lUniv
Type: Package
Version: 0.9.4
Date: 2009-1-12
License: GPL (>= 2)

Details

r2lUniv performs some basic analyses, then generates a code to be included in a LaTeX document to print the analyses in a (so nice!) LaTeX way. See </library/r2lh/doc/r2lhOutput.pdf> for display details.

r2lUniv, in real context...

Bob is working hardly on his Tetris (or on Minesweeper, depends). John, his boss, gets in his office:

- Bob, I have some urgent work for you
- ...
- Bob, I'm talking to you
- Huuu ?
- I said, I have some urgent work.
- Well, John, I am quite busy at the moment.
- It is our major client. He's asking for the univariate analyses of his data.
- Hey, I am a senior statistician, give that to a rookie!
- It is our major client, I want something fast and perfect. You're the only one that produces LaTeX reports.
- Hmmm. How many variables?
- 485.
- I need two weeks.
- I give you one. I want your report by Friday 11th , 13:00

Bob pouts, internally smiling, and starts his Tetris again. He knows that running `r2lu` on Friday 11th around 12:30 will be soon enough... As long as John does not know about `r2lu`, life is beautiful.

See </library/r2lh/doc/r2lhOutput.pdf> for display details.

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See Also

[r2latexUniv](#), [r2latexBiv](#), [r2htmlUniv](#), [r2htmlBiv](#), [r2lMainFile](#), [r2hMainFile](#), [examCheating](#),
[r2lh](#), [Sweave](#), [latex](#)

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