Package 'koboloadeR'

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Type Package

Title A metapackage for Survey Data Crunching

Version 0.1.6

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Description
This package facilitates the data crunching & exploration for dataset collected using xlsform.

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LazyData TRUE

Depends utils,
data.table (>= 1.9.4),
curl,
RCurl,
httr,
bit64,
readr,
DT,
plyr,
dplyr,
tidyr,
readxl,
ggplot2,
reshape2,
digest,
sdcMicro,
rJava,
xlsx,
haven,
shinydashboard,
shinyalert,
ape,
sp,
gdata,
rhandsontable,
stringr,
stringi,
simFrame,
classInt,
ggrepel,

DDIwR,
truncnorm,
OpenRepGrid

Suggests shiny,
testthat (>= 2.1.0),
utils,
knitr

URL https://github.com/unhcr/koboloadeR/docs

BugReports https://github.com/unhcr/koboloadeR/issues

RoxygenNote 6.1.1

VignetteBuilder utils

Encoding UTF-8

SystemRequirements Java (>= 8)

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format_si *Format axis label*

Description

Helper function to format a vector of strings using SI prefix notation

Format a vector of numeric values according to the International System of Units. http://en.wikipedia.org/wiki/SI_prefix

Based on code by Ben Tupper https://stat.ethz.ch/pipermail/r-help/2012-January/299804.html Args:

Usage

```
format_si(...)
```

Arguments

...	List of integer or numeric ...: Args passed to format()

Value

Formatted number.

Author(s)

Someone

Examples

```
format_si()
```

get_me *Authentify in Kobo Server*

Description

Helper Function for GET, Depending on Whether Authentication is Required

Adds basic level authentication if provided.

Usage

```
get_me(user, URL)
```

Arguments

user	string of length 1 or 2 with user details
URL	The URL to be passed to curl

Note

This function is not intended to be called directly. It is used in other functions.

Author(s)

Ananda Mahto

`kobo_anonymisation_report` *Generate a report displaying disclosure risk for Statistical Disclosure Control*

Description

Automatically produce a disclosure risk measurement report.

The report is generated from functions released within sdcmicro package from the worldbank. https://cran.r-project.org/web/packages/sdcMicro/sdcMicro.pdf

Usage

```
kobo_anonymisation_report(frame, form = "form.xls", app = "console")
```

Arguments

`frame`	kobo or odk dataset to use
`form`	The full filename of the form to be accessed (xls or xlsx file).
`app`	The place where the function has been executed, the default is the console and the second option is the shiny app

Author(s)

Edouard Legoupil

Examples

```
kobo_anonymisation_report()
```

`kobo_anonymise` *Remove direct identifier*

Description

Automatically produce an anonymised dataset in line with the anonymisation plan set up in the xlsform.

This method should be used whenever Kobo or ODK forms are used as data collection tools and personal data is being collected. Even when personal data is not being collected it still may be appropriate to apply the methodology since quasi-identifiable data or other sensitive data could lead to personal identification or should not be shared. https://jangorecki.github.io/blog/2014-11-07/Data-Anonymization-in-R.html

Type

Direct identifiers	Can be directly used to identify an individual. E.g. Nam
Quasi- identifiers	Can be used to identify individuals when it is joined with other information.
Sensitive information	& Community identifiable information Might not identify an individual but could put an individu
Meta data	Data about who, where and how the data is collected is often stored sepa

The following are different anonymisation actions that can be performed on sensitive fields. The type of anonymisation should be dictated by the desired use of the data. A good approach to follow is to start from the minimum data required, and then to identify if any of those fields should be obscured.

The methods above can be reference in the column

Method	
Remove	
Reference	Data is removed entirely from the data set and is copied into a reference file. A random unique identifier f

Usage

```
kobo_anonymise(frame, dico = "dico_form.xls.csv")
```

Arguments

dico	Generated from kobo_dico function
kobo	or odk dataset to use

Author(s)

Edouard Legoupil

Examples

```
## Not run:
kobo_anonymise(frame, dico)

## End(Not run)
```

---

kobo_apps *Shiny Apps for Viewing Online KoBo Data*

Description

A launcher for the Shiny apps available in the koboloadeR package.

Usage

```
kobo_apps(app)
```

Arguments

app	The name of the app to be run. If empty, the function will display the names of the available apps.

Value

Launches RStudio's viewer to view the data. The dataset is also downloaded to your Global Environment.

Available Apps

- "data_viewer"

Author(s)

Ananda Mahto

Examples

```
## Not run:
kobo_apps()
kobo_apps("data_viewer")

## End(Not run)
```

---

kobo_arrange_variablename

Replace / or : in variable name in order to use the dictionnary

---

Description

The character to be replaced - coudl be a "/" or a ":"

Usage

```
kobo_arrange_variablename(data)
```

Arguments

data	dataframe with Variables to be renamed

Author(s)

Edouard Legoupil

Examples

```
kobo_arrange_variablename()

## Not run:
kobo_arrange_variablename(data)

## End(Not run)
```

`kobo_atlas_report` *Generate an atlas out of the dataset*

Description

Generate report with data aggregated by location & spatial visualisation / cartography

Usage

```
kobo_atlas_report(frame, dico, mappoly)
```

Arguments

`dico`	Generated from kobo_dico function
`kobo`	or odk dataset to use
`map`	equaly mappoly or mappoint depending on the type of visualisation expected - polygons or points

Author(s)

Edouard Legoupil

Examples

```
kobo_atlas_report(frame, dico, mappoly)

## Not run:
kobo_atlas_report(frame, dico, mappoly)

## End(Not run)
```

kobo_bar_multi *Generate bar Chart - frequency - for select_multiple questions*

Description

Automatically generate bar chart for each of the select_multiple question in the dataset. ggplot2 is used.

Usage

```
kobo_bar_multi(mainDir = "")
```

Arguments

mainDir	Path to the project's working directory: mainly for proper shiny app path

Author(s)

Edouard Legoupil, Elliott Messeiller

Examples

```
kobo_bar_multi()

## Not run:
kobo_bar_multi()

## End(Not run)
```

kobo_bar_multi_facet *Generate frequency bar chart for select_multiple variable and save output as svg for illustrator*

Description

Automatically generate faceted chart for select multiple variables. ggplot2 is used.

Usage

```
kobo_bar_multi_facet(mainDir = "")
```

Arguments

mainDir	Path to the project's working directory: mainly for proper shiny app path

Author(s)

Edouard Legoupil

Examples

```
kobo_bar_multi_facet()

## Not run:
kobo_bar_multi_facet()

## End(Not run)
```

`kobo_bar_multi_print` *Generate bar Chart - frequency - for select_multiple questions and save output as svg for illustrator*

Description

Automatically generate bar chart for each of the select_multiple question in the dataset. used in report

Usage

```
kobo_bar_multi_print(data, dico)
```

Arguments

`data`	kobodatset to use
`dico`	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_bar_multi_print()

## Not run:
kobo_bar_multi_print(data, dico)

## End(Not run)
```

kobo_bar_one *Generate bar Chart - frequency - for select_one questions*

Description

Automatically generate bar chart for each of the select_one question in the dataset. ggplot2 is used.

Usage

```
kobo_bar_one(mainDir = "")
```

Arguments

mainDir	Path to the project's working directory: mainly for shiny app

Author(s)

Edouard Legoupil, Elliott Messeiller

Examples

```
kobo_bar_one()

## Not run:
kobo_bar_one()

## End(Not run)
```

kobo_bar_one_facet *Generate faceted frequency bar chart*

Description

Automatically generate faceted chart for select one variable.. ggplot2 is used.

Usage

```
kobo_bar_one_facet(mainDir = "")
```

Arguments

mainDir	Path to the project's working directory: mainly for proper shiny app path

Author(s)

Edouard Legoupil, Elliott Messeiller

Examples

```
kobo_bar_one_facet()

## Not run:
kobo_bar_one_facet()

## End(Not run)
```

`kobo_bar_one_facet_print` *Generate faceted frequency bar chart and save output as svg for illustrator*

Description

Automatically generate faceted chart for select one variable.. ggplot2 is used.

Usage

```
kobo_bar_one_facet_print(data, dico)
```

Arguments

`data`	kobodatset to use
`dico`	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_bar_one_facet_print()

## Not run:
kobo_bar_one_facet_print(data,  dico)

## End(Not run)
```

kobo_bar_one_print *Generate bar Chart - frequency - for select_one questions and save output as svg for illustrator*

Description

Automatically generate bar chart for each of the select_one question in the dataset. Used in report

Usage

```
kobo_bar_one_print(data, dico)
```

Arguments

data	.
dico	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_bar_one_print()

## Not run:
kobo_bar_one_print(data, dico)

## End(Not run)
```

kobo_boxplot_facet *Generate histogramm plots based on dates*

Description

Automatically generate boxplot. ggplot2 is used.

Usage

```
kobo_boxplot_facet(data, dico)
```

Arguments

data	kobodatset to use
dico	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_boxplot_facet()

## Not run:
kobo_boxplot_facet(data,  dico)

## End(Not run)
```

`kobo_check_analysis_plan` *Check Analysis Plan*

Description

Check if the user setup the analysis plan in the right way.

Usage

```
kobo_check_analysis_plan(form = "form.xls")
```

Arguments

`form`	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.

Value

The return will be a list that contains a list that checks all elements of the analysis plan and message of confirmation

Author(s)

Maher Daoud

Examples

```
kobo_check_analysis_plan()

## Not run:
kobo_check_analysis_plan("myform.xls")

## End(Not run)
```

kobo_clean *Add cleaned variables to the frame based on a reference table*

Description

The function works on a loop based on the dictionnary. Add a column clean and insert in the cell the name of the csv file that will be used to generate the cleaned variable The first column of that file will be used for the matching, the second column will be added to the dataframe. The new cleaned variable will be inserted in the dictionnary. with a suffix '.clean'

Usage

```
kobo_clean(frame, dico)
```

Arguments

dico	Generated from kobo_dico function
kobo	or odk dataset to use

Author(s)

Edouard Legoupil

Examples

```
kobo_clean()

## Not run:
kobo_clean(frame, dico)

## End(Not run)
```

kobo_cluster_report *Generate reports with various clusterisation techniques*

Description

Automatically produce a report exploring potential clusters within survey records.

The report is generated from functions released within FactoMiner & FactoMineR

Usage

```
kobo_cluster_report(frame, form = "form.xls", app = "console")
```

Arguments

frame	kobo or odk dataset to use
form	The full filename of the form to be accessed (xls or xlsx file).
app	The place where the function has been executed, the default is the console and the second option is the shiny app

Author(s)

Edouard Legoupil

Examples

```
kobo_cluster_report()

## Not run:
kobo_cluster_report(frame)

## End(Not run)
```

---

kobo_consolidateone *Merge disagregated select_one variable*

Description

Merge disagregated select_one variable

Usage

```
kobo_consolidateone(data, dico)
```

Arguments

data	original dataset
dico	dictionnary

Value

A "data.table" with additional select_one variable.

data

Author(s)

Edouard Legoupil

Examples

```
kobo_consolidateone()

## Not run:
kobo_consolidateone("myform.xls")

## End(Not run)
```

`kobo_correlation` *Generate histogramm plots based on dates*

Description

Automatically generate maps for all nominal & ordinal variables based on dates. ggplot2 is used.

Usage

```
kobo_correlation()
```

Arguments

`data`	kobodatset to use
`dico`	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_correlation()

## Not run:
kobo_correlation(S)

## End(Not run)
```

`kobo_correlation_analysis` *Correlation Analysis*

Description

This function apllay all correlations test to discover if there is a relation between the targe variable and other variables

Usage

```
kobo_correlation_analysis(form = "form.xls", frame, target,
  app = "console")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.
frame	The dataframe that contains the target variable and the independent variable(s)
target	The name of dependent variable, the variable being tested and measured
app	The place where the function has been executed, the default is the console and the second option is the shiny app

Value

A list that includes all analysis and charts

Author(s)

Maher Daoud

Examples

```
kobo_correlation_analysis()
```

---

kobo_corrplot *text Could*

Description

Produce Correlation plot for all categorical vairable in the data set.

Usage

```
kobo_corrplot(data, dico)
```

Arguments

data	.
dico	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_corrplot()

## Not run:
kobo_corrplot("myform.xls")

## End(Not run)
```

`kobo_create_indicators` *Create Indicators*

Description

Function to compute indicators from indicator sheet

Usage

```
kobo_create_indicators(form = "form.xls")
```

Arguments

`form`	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.

Value

No return, all results will be saved inside new CSV files

Author(s)

Edouard Legoupil, Maher Daoud

Examples

```
kobo_create_indicators()

## Not run:
kobo_create_indicators("myform.xls")

## End(Not run)
```

kobo_crunching_report *Generate Data Crunching Report*

Description

Generate crunching Report that contains all descriptive statistics, correlation analysis, tabulation and data visualization for variables and indicators.

Usage

```
kobo_crunching_report(form = "form.xls", app = "console")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.
app	The place where the function has been executed, the default is the console and the second option is the shiny app

Value

No return, All results will be saved on RMD files and Word files

Author(s)

Edouard Legoupil, Maher Daoud

Examples

```
kobo_crunching_report()

## Not run:
kobo_crunching_report("myform.xls")

## End(Not run)
```

kobo_datasets *Lists the Datasets Available*

Description

Lists the datasets available at the URL being accessed, possibly according to account.

Usage

```
kobo_datasets(user = NULL, api = "unhcr")
```

Arguments

user	Optional. A single string indicating the username and password (in the form of "username:password"), or a character vector or list, length 2, with the first value being the "username", and the second being the "password".
api	The URL at which the API can be accessed. Defaults to "kobo", which loads the KoBo Toolbox API.

Value

A data.table containing details about the datasets available, including items like the "title", "id", and "url" of the datasets.

Author(s)

Ananda Mahto

Examples

```
kobo_datasets()
```

---

kobo_datasets2 *Dataset list*

Description

Lists the Datasets Available including count of submission. - description id - id_string - title - url

Usage

```
kobo_datasets2(user, api)
```

Arguments

user	Optional. A single string indicating the username and password (in the form of "username:password"), or a character vector or list, length 2, with the first value being the "username", and the second being the "password".
api	The URL at which the API can be accessed. Defaults to "kobo", which loads the KoBo Toolbox API.

Value

A data.table containing details about the datasets available, including items like the "title", "id", and "submission".

Author(s)

Edouard Legoupil

Examples

```
kobo_datasets2()
```

`kobo_data_downloader` *Retrieve the Data from a Specified Dataset*

Description

Retrieves the data submitted to a specified dataset.

Usage

```
kobo_data_downloader(formid, user = NULL, api = "unhcr",
  check = TRUE)
```

Arguments

`formid`	The ID of the form to be accessed (as a character string).
`user`	Optional. A single string indicating the username and password (in the form of `"username:password"`), or a character vector or list, length 2, with the first value being the "username", and the second being the "password".
`api`	The URL at which the API can be accessed. Defaults to "unhcr", which loads the UNHCR KoBo Toolbox API.
`check`	Logical. Should the function first check to see whether the data is available offline.

Value

A "data.table" with the full dataset. If data is already found on disk and the number of rows matches with the online datasets, the local copy would be used. The dataset would be named in the form of "data_formid".

Author(s)

Ananda Mahto

Examples

```
## Not run:
kobo_data_downloader("15051")
kobo_data_downloader("31511", api = "unhcr")

## End(Not run)
```

kobo_ddi *DDI generation*

Description

This function creates a DDI version 2.5, XML file structure for microdata library

Usage

```
kobo_ddi(form = "form.xls", app = "console")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.
app	The place where the function has been executed, the default is the console and the second option is the shiny app

Value

DDI version 2.5, XML file structure will saved under out/ddi

Author(s)

Maher Daoud

Examples

```
kobo_ddi()

## Not run:
kobo_ddi("myform.xls")

## End(Not run)
```

kobo_dico *Create Data dictionnary an the xlsform*

Description

Produce a data dictionnary based on the xlsform for the project

Usage

```
kobo_dico(form = "form.xls")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.

Value

A "data.table" with the full data dictionnary. To be used in the rest of the analysis.

Author(s)

Edouard Legoupil

Examples

```
kobo_dico()

## Not run:
kobo_dico("myform.xls")

## End(Not run)
```

---

kobo_dummy *Create a dummy dataset*

Description

Automatically produce an dummy dataset in line with the structure of an xlsform.

Making decisions about research design and analysis strategies is often difficult before data is collected, because it is hard to imagine the exact form data will take. This function helps imagine what data will look like before they collect it. samplesize is set per defautl at 500 records

Supported Features

- Gnerate a data set with an output similar to the one needed in koboloader - respects ODK structure "‘relevant‘" skip logic (Some advanced functionality such as "coalesce()" not covered) "‘constraint‘" and "‘repeat‘" - adds InstandID column to link hierearchical data based on "‘repeat_count‘"

Usage

```
kobo_dummy(form = "form.xls")
```

Arguments

dico	file representing the xlsform data dictionnary - generated from kobo_dico()

Author(s)

Edouard Legoupil

Examples

```
kobo_dummy()

## Not run:
kobo_dummy(form)

## End(Not run)
```

kobo_edit_form *Edit XLS form with shiny app for configuration*

Description

This function used to change the data of sheets in the xlsform and apply all required styles for each sheet

Usage

```
kobo_edit_form(form = "form.xls", survey = NULL, choices = NULL,
  indicator = NULL, settings = NULL, analysisSettings = NULL)
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.
survey	Dataframe that represent the data of survey sheet in the xlsform
choices	Dataframe that represent the data of choices sheet in the xlsform
indicator	Dataframe that represent the data of indicator sheet in the xlsform
settings	Dataframe that represent the data of settings sheet in the xlsform
analysisSettings	Dataframe that represent the data of analysisSettings sheet in the xlsform

Value

No return, this function edit the original XLSform directly

Author(s)

Maher Daoud

Examples

```
kobo_edit_form()

## Not run:
kobo_edit_form("myform.xls")

## End(Not run)
```

kobo_encode *Encode variable*

Description

Insert the full label in data frame based on dictionnary

Usage

```
kobo_encode(data, dico)
```

Arguments

data	Dataframe to relabel
dico	Data dictionnary generated from kobo_dico

Value

A "data.table" with the full data.label. To be used for graphs generation.

Author(s)

Edouard Legoupil

Examples

```
kobo_encode()

## Not run:
kobo_encode(data, dico)

## End(Not run)
```

kobo_encode_repeat *Encode variable*

Description

Insert the full label in data frame based on dictionnary - used when data is exported through briefcase because of repeated element in the dataset. In the this case, merge is done on name instead of fullname.

Usage

```
kobo_encode_repeat(data, dico)
```

Arguments

data	Dataframe to re-label
dico	Data dictionnary generated from kobo_dico

Value

A "data.table" with the full data.label. To be used for graphs generation.

Author(s)

Edouard Legoupil

Examples

```
kobo_encode_repeat()

## Not run:
kobo_encode_repeat(data, dico)

## End(Not run)
```

`kobo_form` *Download form from the platform*

Description

Download form from the platform

Usage

```
kobo_form(formid, userpwd, api)
```

Arguments

`formid`	The ID of the form to be accessed (as a character string).
`api`	The URL at which the API can be accessed. Defaults to "unhcr", which loads the UNHCR KoBo Toolbox API.
`user`	Optional. A single string indicating the username and password (in the form of `"username:password"`), or a character vector or list, length 2, with the first value being the "username", and the second being the "password".

Value

Downloaded form path.

Author(s)

Edouard Legoupil

Examples

```
kobo_form()

## Not run:
kobo_form("15051")
kobo_form("31511", user = userpwd, api = "unhcr")

## End(Not run)
```

`kobo_forminfo` *Get form attributes*

Description

Obtain form info in order to correctly retrieve the form.

Usage

```
kobo_forminfo(formid, user = NULL, api = api)
```

Arguments

`formid`	The ID of the form to be accessed (as a character string).
`user`	Optional. A single string indicating the username and password (in the form of `"username:password"`), or a character vector or list, length 2, with the first value being the "username", and the second being the "password".
`api`	The URL at which the API can be accessed. Defaults to "unhcr", which loads the UNHCR KoBo Toolbox API.

Value

A "data.table" with the full forminfo. The forminfo would be named in the form of "data_formid".

The URL of the form based on form id.

Author(s)

Edouard Legoupil

Examples

```
kobo_forminfo()
#' @examples
## Not run:
kobo_forminfo("15051")
kobo_forminfo("31511", api = "unhcr")

## End(Not run)
```

kobo_getMainDirectory *get Main Directory for a KoboloadeR project*

Description

the function return the Main Directory for KoboloadeR packag

Usage

```
kobo_getMainDirectory()
```

Value

A string for Main Directory path.

Author(s)

Maher Daoud

Examples

```
kobo_projectinit()
```

kobo_get_begin_repeat *Get all begin repeat from xlsform*

Description

Get the 'name' column for all rows that have 'begin repeat' value in 'type' column

Usage

```
kobo_get_begin_repeat(form = "form.xls")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.

Value

return a list that contains 1.vector of string represent the names 2.message about status

Author(s)

Maher Daoud

Examples

```
kobo_get_begin_repeat()

## Not run:
kobo_get_begin_repeat("myform.xls")

## End(Not run)
```

---

kobo_get_config *Get Configuration*

Description

Return all configuration from Analysis Settings sheet of xlsform

Usage

```
kobo_get_config(form = "form.xls")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). where settings sheet contains all configuration of the project

Value

Return a dataframe that contains configuration of the project

Author(s)

Maher Daoud

Examples

```
kobo_get_config()
```

---

kobo_get_dataframes_levels *Dataframes Levels*

Description

Produce a dataframe that represents levels and parents for the main dataframe and all sub datasets.

Usage

```
kobo_get_dataframes_levels(form = "form.xls")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.

Value

A "data.frame" contains levels and parents for the main dataframe and all sub datasets.

Author(s)

Maher Daoud

Examples

```
kobo_get_dataframes_levels()

## Not run:
kobo_get_dataframes_levels("myform.xls")

## End(Not run)
```

---

kobo_get_theme *Get Themes*

Description

Return all themes that are used for styling reports and charts

Usage

```
kobo_get_theme()
```

Value

Return a list that contains all themes

Author(s)

Maher Daoud, Edouard Legoupil - with insiparation from bbc

GENERAL THEME we'll use this for most of our charts and build on it when we need to

THEME FOR 'WIDE' BAR CHARTS there are several bar charts that are very wide, and need some special formatting

THEME FOR 'WIDE' BAR CHARTS we'll use this for small multiple charts. these also have some special formatting requirements

THEME FOR MAPS It's based on theme_minimal and basically resets all the axes. It also defined a very subtle grid and a warmgrey background, which gives it some sort of paper map feeling..

Examples

```
kobo_get_theme()
```

kobo_histo — *Generate histograme for all integer questions*

Description

Automatically generate histogrammes for each of the integer questions in the dataset. ggplot2 is used.

Usage

```
kobo_histo(mainDir = "")
```

Arguments

mainDir	Path to the project's working directory: mainly for proper shiny app path

Author(s)

Edouard Legoupil

Examples

```
kobo_histo()

## Not run:
kobo_histo()

## End(Not run)
```

kobo_histo_print — *Generate histograme for all integer questions*

Description

Automatically generate histogrammes for each of the integer questions in the dataset. ggplot2 is used.

Usage

```
kobo_histo_print(data, dico)
```

Arguments

data	kobodatset to use
dico	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_histo_print()

## Not run:
kobo_histo_print(data, dico)

## End(Not run)
```

---

kobo_host *Select server*

Description

A helper function to conveniently switch different APIs.

Specifies the Host URL of the API to Use

Usage

```
kobo_host(instring)
```

Arguments

instring	Either "kobo", "kobohr", "ona", or a custom (full) URL.

Value

A single string with the URL to use.

Note

API URLs are made available for KoBo Toolbox ("kobo", https://kc.kobotoolbox.org/api/v1/), KoBo Humanitarian Response ("kobohr", https://kc.humanitarianresponse.info/api/v1/), Ona ("ona", https://ona.io/api/v1/) and Unhcr ("unhcr", https://kobocat.unhcr.org/api/v1/) . For your own installation, or other installations using the same API but accessed at a different URL, enter the full URL.

This function is not intended to be called directly. It is used in other functions.

Author(s)

Ananda Mahto

Examples

```
## Not run:
kobo_host("unhcr")
kobo_host("ttps://kobocat.unhcr.org/api/v1/")

## End(Not run)
```

kobo_indicator *Import & perform the indicator calculation from the XLS form*

Description

Add additional variables based on the data analysis plan to the data frame

Usage

```
kobo_indicator(mainDir = "")
```

Arguments

mainDir	Path to the project's working directory: mainly for shiny app

Value

A file with all elements to get your data & form.

Author(s)

Elliott Messeiller

Examples

```
kobo_indicator()
```

kobo_label *Label Variable*

Description

Insert the full label in data frame based on dictionnary

Usage

```
kobo_label(datalabel, dico)
```

Arguments

dico	(generated from kobo_dico)
data	.

Value

A "data.table" with the full data.label. To be used for graphs generation.

Author(s)

Edouard Legoupil

Examples

```
kobo_label()

## Not run:
kobo_label(data, dico)

## End(Not run)
```

---

kobo_left_align *UNHCR ggplot2 theme*

Description

Left align chart title and subtitle on a ggplot2

Usage

```
kobo_left_align(plot_name, pieces)
```

Value

Return better chart

Author(s)

Edouard Legoupil - with inspiration from bbc

Examples

```
kobo_left_align()
```

---

kobo_load_data *Kobo Load Data*

Description

Load form, building dictionnary, loading all required data into the environment, Check to split select_multiple if data is extracted from ODK, Clean variable if any and Re-encoding data based on the dictionnary

Usage

```
kobo_load_data(form = "form.xls", app = "console")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.
app	The place where the function has been executed, the default is the console and the second option is the shiny app

Value

No return, all results will be saved inside new CSV files

Author(s)

Edouard Legoupil, Maher Daoud

Examples

```
kobo_load_data()

## Not run:
kobo_load_data("myform.xls")

## End(Not run)
```

`kobo_load_packages` *Load Packages*

Description

Load all necessary packages for koboloadeR

Usage

```
kobo_load_packages()
```

Value

No return

Author(s)

Edouard Legoupil, Maher Daoud

Examples

```
kobo_load_packages()
```

kobo_map_cat *Generate Maps for categorical variables*

Description

Automatically generate maps for all nominal & ordinal variables based on dates. ggplot2 is used.

Usage

```
kobo_map_cat(data, xmax, xmin, ymax, ymin, dico)
```

Arguments

data	kobodatset to use
xmax	Bounding box for the map - max longitude - in decimal degree
xmin	Bounding box for the map - min longitude - in decimal degree
ymax	Bounding box for the map - max latitude - in decimal degree
ymin	Bounding box for the map - min latitude - in decimal degree
dico	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_map_cat()

## Not run:
kobo_map_cat(data,xmax,xmin,ymax,ymin, dico)

## End(Not run)
```

kobo_map_int *Generate Maps for integer variables*

Description

Automatically generate maps for all nominal & ordinal variables based on dates. ggplot2 is used.

Usage

```
kobo_map_int(data, xmax, xmin, ymax, ymin, dico)
```

Arguments

data	kobodatset to use
xmax	Bounding box for the map - max longitude - in decimal degree
xmin	Bounding box for the map - min longitude - in decimal degree
ymax	Bounding box for the map - max latitude - in decimal degree
ymin	Bounding box for the map - min latitude - in decimal degree
dico	(generated from kobo_dico)

Author(s)

Edouard Legoupil

Examples

```
kobo_map_int()

## Not run:
kobo_map_int(data,xmax,xmin,ymax,ymin, dico)

## End(Not run)
```

---

kobo_prediction_report

Generate prediction

Description

Automatically produce prediction reports containing elements of descriptive analysis, information about the methods used (such as regression and classification) and prediction results. The configuration of the function is done in an xlsform. The target variables are taken from the household surveys and three types of outcome will be considered: binary (going to school, marry children,...), numeric (expenditure per capita,...) and ordinal (level of agreement, support from local community,...). Then the function will train different models (using the inner joint between registration and household surveys as training data) and select the most accurate one. The user needs to have previously loaded the registry, survey and form files

Usage

```
kobo_prediction_report(dico, frame, registry)
```

Arguments

kobo	or odk dataset to use

Author(s)

Damien Seite, Edouard Legoupil

Examples

```
kobo_prediction_report()

## Not run:
kobo_prediction_report("myform.xls")

## End(Not run)
```

---

kobo_prepare_form *Prepare XLS form*

Description

Prepare XLSform by adding chapter, disaggregation, correlate, variable, anonymise, structuralequation, clean, cluster, predict, mappoint, mappoly in case if those fields are not exist; the function will create dummy column for each one. Also, coloring all rows that have type equal to "begin group", "end group", "begin repeat" or "end repeat".

Usage

```
kobo_prepare_form(form = "form.xls")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.

Value

No return, this function edit the original XLSform directly

Author(s)

Maher Daoud

Examples

```
kobo_prepare_form()

## Not run:
kobo_prepare_form("myform.xls")

## End(Not run)
```

kobo_projectconfig *Data download configuration file*

Description

Write all necessary configuration files for your project

Usage

```
kobo_projectconfig()
```

Value

A file with all elements to get your data & form.

Author(s)

Edouard Legoupil

Examples

```
kobo_projectconfig()
```

kobo_projectinit *Analysis project initiation*

Description

Create analysis project structure

Usage

```
kobo_projectinit()
```

Value

A structure of directory and scripts in order to set up quickly a project.

Author(s)

Edouard Legoupil, Elliott MEesseiller

Examples

```
kobo_projectinit()
```

`kobo_question` *Generates graphics and basic information based on the type of question and if there's a disaggregation*

Description

Automatically generates bar charts, histograms, and basic information of the question based on the question type to generate the report.

Usage

```
kobo_question(question, mainDir = "")
```

Arguments

`question`	Name of the question to be treated, as in "fullname" column in dico
`mainDir`	Path to the project's working directory: mainly for shiny app

Author(s)

Elliott Messeiller

Examples

```
kobo_question("s2.beneficiary_code")

## Not run:
kobo_question("s2.beneficiary_code")

## End(Not run)
```

`kobo_registration` *Retrieve registration data from UNHCR proGres database and generate a summary report.*

Description

A standard query that retrieve refugee registration data from proGres, aggregated at the case level. This dataset can be joined to the survey dataset in order to generate prediction model. to be used with the prediction report generation.

This includes the variables below

Arrival Date Districts of Origin Districts of Arrival Household size (case) Household size (squared) Share of members under 5 years of age Share of members between 5 and 17 years of age Share of male members between 18 and 50 Share of female members between 18 and 50 Share of members between 51 and 70 Share of members above 71 Share of members between 6 and 10 years of age Share of members between 11 and 17 years of age Share of members between 18 and 60 years of age Share of members above 60 years of age Sum of members under 5 years of age Sum of

members between 6 and 10 years of age Sum of members between 11 and 17 years of age Sum of members between 18 and 60 years of age Sum of members above 60 years of age Share of members with a disability Sum of members with a disability Members above 60 years of age with a medical condition Dependency ratio Dependent members with a disability More than 3 dependents in HH

Demographics - Head of Household variables Head of HH is female Head of HH age Head above 60 years of age Head of HH is female and below 18 years of age Head of HH is disabled Head of HH education level Head of HH with a medical condition Head of HH below 18

Usage

```
kobo_registration()
```

Value

save a cleaned csv file within the data folder.

Author(s)

Edouard Legoupil

Examples

```
kobo_registration()
```

---

kobo_rename_xlsform_dataframes

Rename xlsform and all dataframes

Description

Rename xlsform under data file to form.xls and all dataframes to the

Usage

```
kobo_rename_xlsform_dataframes(form = "form.xls", app = "console")
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.
app	The place where the function has been executed, the default is the console and the second option is the shiny app

Value

no return. only if there is error.

Author(s)

Maher Daoud

Examples

```
kobo_rename_xlsform_dataframes()
```

`kobo_samplingframe` *Sample a dataframe*

Description

Do basic simple random samples based on a provided dataframe. Takes 3 types of sampling strategies: - Simple random - Stratified 2-stages - Cluster sampling All are based on a random selection of primary survey units (PSU) according to confidence level, margin of error, proportion and survey buffer provided.

Usage

```
kobo_samplingframe(data, strata, pop_col, confidence_level = 0.95,
  margin_error = 0.05, proportion = 0.5, method, buffer = 0.05)
```

Arguments

`data`	Data frame containing the population informations
`strata`	Column name of the data frame to serve as PSU (as character)
`pop_col`	Column name of the data frame where is the population figure for each PSU (as character)
`confidence_level`	Confidence level to achieve in fraction of one (e.g. 0.95)
`margin_error`	Margin of error to achieve in fraction of one (e.g. 0.05)
`proportion`	Proportion estimation in fraction of one (e.g. 0.5)
`method`	Sampling methode to use. Three options: - "srs" : Simple Random Sample - "strat2st": Stratified 2-stages random sample - "cluster": Cluster sampling
`buffer`	Buffer to the sampling target to ensure datacollection, in fraction of one (e.g. 0.05)

Author(s)

Elliott Messeiller

Examples

```
## Not run:
kobo_samplingframe(data=SamplingFrame, strata="Province", pop_col="Households",confidence_level=0.95,margin

## End(Not run)
```

kobo_shiny *Shiny app launcher*

Description

A function to launch shiny apps

Usage

```
kobo_shiny(app = "")
```

Arguments

app

Author(s)

Elliott Messeiller

Examples

```
kobo_shiny()

## Not run:
kobo_shiny(appname)

## End(Not run)
```

kobo_split_multiple *Split variables resulting from select_multiple questions*

Description

To be used when extracting from ODK that does not offers splitting capacity

Usage

```
kobo_split_multiple(data, dico)
```

Arguments

data	Dataframe with selectmultiple column to split
dico	Data dictionnary generated from kobo_dico

Value

data A "data.table" with the full splitted select_multiple.

Author(s)

Edouard Legoupil

Examples

```
kobo_split_multiple()

## Not run:
kobo_split_multiple(data, dico)

## End(Not run)
```

---

kobo_submission_count *Retrieve the Number of Submissions in a Specified Dataset*

Description

Retrieves the number of submissions made to a specified dataset.

Usage

```
kobo_submission_count(formid, user = NULL, api = "unhcr")
```

Arguments

formid	The ID of the form to be accessed (as a character string).
user	Optional. A single string indicating the username and password (in the form of "username:password"), or a character vector or list, length 2, with the first value being the "username", and the second being the "password".
api	The URL at which the API can be accessed. Defaults to "kobo", which loads the KoBo Toolbox API.

Value

A single number indicating the number of submissions received.

Author(s)

Ananda Mahto

Examples

```
kobo_submission_count("15051")
kobo_submission_count("31511", api = "kobohr")
```

kobo_surveyname *Extract Survey name from XlsForm*

Description

parse xlsfrom

Usage

```
kobo_surveyname(form)
```

Arguments

```
form
```

Author(s)

Edouard Legoupil

Examples

```
kobo_surveyname()

## Not run: r
kobo_surveyname(form)

## End(Not run)
```

kobo_text_cloud *text Could*

Description

Produce word cloud visualisation for the text questions. Can be also effective to see the results of or_other questions.

Usage

```
kobo_text_cloud(data, dico)
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.

Value

A "data.table" with the full data dictionnary. To be used in the rest of the analysis.

Author(s)

Edouard Legoupil

Examples

```
kobo_text_cloud()

## Not run:
kobo_text_cloud("myform.xls")

## End(Not run)
```

---

kobo_time_parser *Parses Dates from KoBo Into a More Usable Format*

Description

The date/time values in KoBo usually get stored in a format like the following: "2015-08-27T13:28:29.000+06:30". These functions process these date/times into more usable formats.

Usage

```
kobo_time_parser(instring, timezone = Sys.timezone())
```

Value

The `kobo_time_parser` function returns a formatted character string that can be easily parsed as a date/time object.

Author(s)

Ananda Mahto

Examples

```
kobo_time_parser(TIME)
kobo_time_parser(TIME, timezone = "Asia/Rangoon")
kobo_time_parser(TIME, timezone = "America/Los_Angeles")
```

kobo_time_parser_UTC *Parses Dates from KoBo Into a More Usable Format*

Description

The date/time values in KoBo usually get stored in a format like the following: "2015-08-27T13:28:29.000+06:30". These functions process these date/times into more usable formats.

Usage

```
kobo_time_parser_UTC(instring)
```

Arguments

instring	A date/time format coming from KoBo.
timezone	A valid timezone, available in the list available from OlsonNames.

Value

The kobo_time_parser_UTC function returns a POSIXct object, while the kobo_time_parser function returns a formatted character string that can be easily parsed as a date/time object.

Author(s)

Ananda Mahto

Examples

```
TIME <- "2015-08-27T13:28:29.000+06:30"
kobo_time_parser_UTC(TIME)
```

kobo_to_xlsform *Generate xlsfrom skeleton from a dataframe*

Description

Creates and save a xlsform skeleton from a data.frames in your data folder The form.xls will be saved in the data folder of your project. The generated xlsfrom will need to be manually edited to configure your analysis

Note that this function only works with data.frames. The function will throw an error for any other object types.

Usage

```
kobo_to_xlsform(df, form = "form.xls", n = 100)
```

Arguments

form	The full filename of the form to be accessed (xls or xlsx file). It is assumed that the form is stored in the data folder.
n	number of levels for a factor to be considered as a text

Author(s)

Edouard Legoupil

Examples

```
data(iris)
str(iris)
kobo_to_xlsform(iris)
```

---

kobo_trend *Generate histogramm plots based on dates*

Description

Automatically generate histogramm for all nominal & ordinal variables based on dates. ggplot2 is used.

Usage

```
kobo_trend(data, date, dico)
```

Arguments

data	kobodatset to use
date	field of date type used to generare trends
dico	(generated from kobo_dico)
duration	number of days in the past

Author(s)

Edouard Legoupil

Examples

```
kobo_bar_trend()

## Not run:
kobo_trend(data, date, dico)

## End(Not run)
```

kobo_trend_report *Generate trend report*

Description

Generate report with data aggregated by location & time

Usage

```
kobo_trend_report(frame, dico)
```

Arguments

dico	Generated from kobo_dico function
kobo	or odk dataset to use

Author(s)

Edouard Legoupil

Examples

```
kobo_trend_report(frame, dico)

## Not run:
kobo_trend_report(frame, dico)

## End(Not run)
```

kobo_unhcr_style_bar *UNHCR ggplot2 theme*

Description

Return ggplot2 styling for bar chart

Usage

```
kobo_unhcr_style_bar()
```

Value

Return UNHCR Style

Author(s)

Edouard Legoupil - with inspiration from bbc

Examples

```
kobo_unhcr_style_bar()
```

kobo_unhcr_style_histo *UNHCR ggplot2 theme*

Description

Return ggplot2 styling for histogram

Usage

```
kobo_unhcr_style_histo()
```

Value

Return UNHCR Style

Author(s)

Edouard Legoupil - with inspiration from bbc

Examples

```
kobo_unhcr_style_histo()
```

kobo_unhcr_style_map *UNHCR ggplot2 theme*

Description

Return ggplot2 styling for maps

Usage

```
kobo_unhcr_style_map()
```

Value

Return UNHCR Style

Author(s)

Edouard Legoupil -

Examples

```
kobo_unhcr_style_map()
```

kobo_unhcr_style_scatter *UNHCR ggplot2 theme*

Description

Return ggplot2 styling for scatter plot

Usage

```
kobo_unhcr_style_scatter()
```

Value

Return UNHCR Style

Author(s)

Edouard Legoupil - with inspiration from bbc

Examples

```
kobo_unhcr_style_scatter()
```

kobo_weight *Weight a datset*

Description

Automatically weight the data according to the information of 0-config.R

Usage

```
kobo_weight(mainDir = "")
```

Arguments

mainDir	Path to the project's working directory: mainly for shiny app

Author(s)

Elliott Messeiller

Examples

```
kobo_weight()

## Not run:
kobo_weight()

## End(Not run)
```

`ltbl` *Helper function to extract the last part of question headings*

Description

Helper function to extract the last part of question headings

Usage

```
ltbl(x, y, z)
```

Arguments

x	= database name
y	= column index group
z	= column index

Value

last part of question headings

Author(s)

Someone

Examples

```
ltbl(x,y,z)
```

multresponse *Helper function to concatenate multiple choices (select_mutiple type question) formatted TRUE / FALSE*

Description

Helper function to concatenate multiple choices (select_mutiple type question) formatted TRUE / FALSE

Usage

```
multresponse(x)
```

Arguments

x	String

Value

last part of question headings

Author(s)

Someone

Examples

```
multresponse(x)
```

psum *Sum with NA*

Description

Helper function that will sum values even if we have NA

Usage

```
psum(..., na.rm = FALSE)
```

Arguments

...	List of integer or numeric

Value

Integer or numeric.

Author(s)

Someone

Examples

```
psum()
```

`pwd_parse` *Parse Kobo Password*

Description

Helper Function to Parse a String to be Used as a Username/Password Combination

Converts a string of length 1 or of length 2 into a list that can then be passed on to the `authenticate` function from the "httr" package.

Usage

```
pwd_parse(...)
```

Arguments

`...`	A single string, character vetor, or list containing the username and password that should be used. If it is a single string, it should be in the form of "username:password".

Note

This function is not intended to be called directly. It is used in other functions.

Author(s)

Ananda Mahto

Examples

```
## Not run:
pwd_parse("username", "password")
pwd_parse("username:password")
pwd_parse(c("username", "password"))

## End(Not run)
```

round2 *Create roundup function*

Description

Create roundup function

Usage

```
round2(x, n)
```

Arguments

List	of integer or numeric to be rounded
Rounding	level

Value

rounded figure.

Author(s)

Someone

Examples

```
round2(x, n)
```

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