Package: limonaid (via r-universe)

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Title Working with 'LimeSurvey' Surveys and Responses

Version 25.5.5

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License GPL (>= 3)

Description 'LimeSurvey' is Free/Libre Open Source Software for the development and administrations of online studies, using sophisticated tailoring capabilities to support multiple study designs (see <https://www.limesurvey.org>). This package supports programmatic creation of surveys that can then be imported into 'LimeSurvey', as well as user friendly import of responses from 'LimeSurvey' studies.

Encoding UTF-8

URL https://limonaid.opens.science

BugReports https://codeberg.org/R-packages/limonaid/issues

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limonaid-package *limonaid-package*

Description

Working With LimeSurvey Surveys and Responses

Details

LimeSurvey is Free/Libre Open Source Software for the development and administrations of online studies, using sophisticated tailoring capabilities to support multiple study designs. This package supports programmatic creation of surveys that can then be imported into LimeSurvey, as well as userfriendly import of responses from LimeSurvey studies.

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See Also

Useful links:

- https://limonaid.opens.science
- Report bugs at https://codeberg.org/R-packages/limonaid/issues

---

add_answer_option_to_question
Add an answer option to a question

Description

This is a convenience function that allows you to add an answer option to a question object.

Usage

```
add_answer_option_to_question(question, ...)
```

Arguments

question	The limonaid Question object
...	Options that are passed on to the Question's add_answer_option() method.

Value

The question object.

Examples

```
myQuestion <-
  limonaid::Question$new(
    code = 'myQuestion',
    type='radio'
  ) |>
  add_answer_option_to_question(
    code = 1,
    optionTexts = "First option"
  ) |>
  add_answer_option_to_question(
    code = 2,
    optionTexts = "Second option"
  );
```

`append_lsdf_rows` *A home-rolled version of plyr::rbind.fill*

Description

This is used when creating dataframes for TSV exports.

Usage

```
append_lsdf_rows(data, row)
```

Arguments

`data`	The first dataframe.
`row`	The second dataframe.

Value

A merged dataframe.

Examples

```
limonaid::append_lsdf_rows(mtcars, iris);
```

cat0 *Concatenate to screen without spaces*

Description

The cat0 function is to cat what paste0 is to paste; it simply makes concatenating many strings without a separator easier.

Usage

```
cat0(..., sep = "")
```

Arguments

`...`	The character vector(s) to print; passed to cat.
`sep`	The separator to pass to cat, of course, `""` by default.

Value

Nothing (invisible `NULL`, like cat).

Examples

```
cat0("The first variable is '", names(mtcars)[1], "'.");
```

checkPkgs *Check for presence of a package*

Description

This function efficiently checks for the presence of a package without loading it (unlike `library()` or `require()`. This is useful to force yourself to use the package::function syntax for addressing functions; you can make sure required packages are installed, but their namespace won't attach to the search path.

Usage

```
checkPkgs(
  ...,
  install = FALSE,
  load = FALSE,
  repos = "https://cran.rstudio.com"
)
```

Arguments

...	A series of packages. If the packages are named, the names are the package names, and the values are the minimum required package versions (see the second example).
install	Whether to install missing packages from repos.
load	Whether to load packages (which is exactly *not* the point of this function, but hey, YMMV).
repos	The repository to use if installing packages; default is the RStudio repository.

Value

Invisibly, a vector of the available packages.

Examples

```
limonaid::checkPkgs('base');

### Require a version
limonaid::checkPkgs(limonaid = "0.2.0");

### This will show the error message
tryCatch(
  limonaid::checkPkgs(
    base = "99",
    stats = "42.5",
    ufs = 20
  ),
  error = print
);
```

---

convertToNumeric *Conveniently convert vectors to numeric*

Description

Tries to 'smartly' convert factor and character vectors to numeric.

Usage

```
convertToNumeric(vector, byFactorLabel = FALSE)
```

Arguments

vector	The vector to convert.
byFactorLabel	When converting factors, whether to do this by their label value (TRUE) or their level value (FALSE).

Value

The converted vector.

Examples

```
convertToNumeric(as.character(1:8));
```

`emptyDf` *Create an empty dataframe*

Description

This function is used by `append_lsdf_rows()`, and you normally should not use it directly.

Usage

```
emptyDf(colnames, nrow, fillWith = "")
```

Arguments

`colnames`	The column names for the dataframe.
`nrow`	The number of rows.
`fillWith`	What to fill the dataframe with.

Value

The data.frame.

Examples

```
limonaid::emptyDf(c("x", "y"), 3);
```

`export_with_languages` *Export a survey with a specific primary and additional languages*

Description

Sometimes it is useful to export a version of a survey with a different primary language, and/or less additional languages. This function allows that.

Usage

```
export_with_languages(
  x,
  language,
  path,
  additional_languages = NULL,
  new_sid = x$sid,
  backupLanguage = x$language,
  prefix = "limesurvey--",
  suffix = "",
  parallel = TRUE
)
```

Arguments

x	The Survey object.
language	The desired primary language.
path	The path where to save the .TSV file.
additional_languages	If specified, the selection of additional languages. If not specified, the survey's primary language will just be switched to language, and all original languages will be retained.
new_sid	If specified, a new sid to use.
backupLanguage	The language to use if an element is not specified in one of the languages.
prefix	The prefix to use in the filename.
suffix	The suffix to use in the filename.
parallel	Whether to use multiple cores when exporting the survey.

Value

Invisibly, the cloned and altered survey object.

Examples

```
### Add later
```

---

get_session_key *Get a LimeSurvey API session key*

Description

This function logs into the LimeSurvey API and provides an access session key. It was adapted by Gjalt-Jorn Peters from a function originally written by Andrew Heiss.

Usage

```
get_session_key(
  username = getOption("lime_username"),
  password = getOption("lime_password"),
  hostname = getOption("lime_api")
)
```

Arguments

username	LimeSurvey username. Defaults to value set in options().
password	LimeSurvey password. Defaults to value set in options().
hostname	The host to use (if not using the one specified in the options). If no hostname is specified in the 'lime_api' option and no host name is passed as hostname, the subdomain stored in limonaid::opts$get("ls_subdomain") will be combined with the domain stored in limonaid::opts$get("ls_domain") to create the host name. You can change these using the limonaid::opts$set() function.

Value

API token

Examples

```
## Not run:
get_session_key()

## End(Not run)
```

Group *R6 Class representing a LimeSurvey group*

Description

R6 Class representing a LimeSurvey group

R6 Class representing a LimeSurvey group

Details

A group is mostly just a container for questions.

Public fields

`group_name` The group name / title / label

`description` The group description

`grelevance` The relevance equation for the group

`group_order` The group order (in the survey)

`randomization_group` The randomization group (that the group is a part of)

`language` The language of the group; or primary language, if there are multiple languages.

`additional_languages` Any additional languages for the title and description elements.

`id` The identifier of the group (a unique number in a survey)

`sid` The identifier of the survey that this group belongs to

`otherOptions` Any additional options, stored as a named list by assigning `as.list(...)`.

`questions` The questions in this group

Methods

Public methods:

- `Group$new()`
- `Group$add_question()`
- `Group$export_to_lsg()`
- `Group$clone()`

Method `new()`**:** Create a new group object. Most of this text comes directly from the TSV manual page at https://www.limesurvey.org/manual/Tab_Separated_Value_survey_structure, so please see that page for more details.

Usage:

```
Group$new(
  group_name = "",
  description = "",
  grelevance = 1,
  group_order = 1,
  randomization_group = NULL,
  language = "en",
  additional_languages = "",
  id = NULL,
  sid = NULL,
  new_id_fun = NULL,
  uqid = NULL,
  repo_url = "https://operationalizations.com/questionnaires/json",
  ...
)
```

Arguments:

`group_name` The title of the group (if there are multiple languages, a named vector where every element is the title in another language and every element's name is the language code).

`description` The description of the group (if there are multiple languages, a named vector where every element is the title in another language and every element's name is the language code).

`grelevance` The group's relevance equation

`group_order` The group order (if the group is part of a survey)

`randomization_group` The group's randomization group

`language` The group's only or primary language

`additional_languages` Any additional languages

`id` Optionally, the id of the group.

`sid` Optionally, the identifier of the survey that this group belongs to.

`new_id_fun` A function to set identifiers (for XML exports, which mirrors MySQL tables and so needs identifiers). By default, new question objects receive this function from the group containing them; and groups receive it from the survey containing them. This ensures that identifiers are always unique in a survey (despite question objects not being able to 'see' anything in the group containing them, and group objects not being able to 'see' anything in the survey containing them; because they 'received' this function from the parent object, and it 'bubbles down' through groups to the questions, those functions still get and set a private identifier property in the 'top-most' object).

`uqid` A Unique Questionnaire Identifier (UQID) to import a questionnaire and populate the group with it.

`repo_url` The URL to a repo serving the questionnaire with the UQID in JSON.

`...` Any additional options, stored as a named list in the `otherOptions` property by assigning `as.list(...)`.

Returns: A new `Group` object.

Method `add_question()`**:** Add a question to a group object.

Usage:

```
Group$add_question(
  code,
  type = NULL,
  lsType = NULL,
  question_order = NULL,
  ...
)
```

Arguments:

`code` The question code.

`type` The question type.

`lsType` The question type, as LimeSurvey question type.

`question_order` The question order; automatically filled if left empty; starts counting at 0.

`...` Additional arguments are used to create the Question using `Question$new`.

Returns: Invisibly, the `thisQuestion` object that was just added. Note that you can further modify this, which will modify the question object "in" the survey group as well. This allows you to pipe the question creation on to, for example, add answer options.

Method `export_to_lsg()`**:** Export the group as an LSG (xml) file.

Usage:

```
Group$export_to_lsg(
  file = NULL,
  preventOverwriting = limonaid::opts$get("preventOverwriting"),
  encoding = limonaid::opts$get("encoding"),
  silent = limonaid::opts$get("silent"),
  backupLanguage = self$language
)
```

Arguments:

`file` The filename to which to save the file.

`preventOverwriting` Whether to prevent overwriting.

`encoding` The encoding to use

`silent` Whether to be silent or chatty.

`backupLanguage` The language to get content from if not from the primary langage.

`parallel` Whether to work serially or in parallel.

Returns: Invisibly, the `Survey` object.

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
Group$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

Examples

```
myGroup <- limonaid::Group$new(
  group_name = "My Group"
);
myGroup$add_question(
  "testQuestion1",
  questionTexts = "First question",
  type="free text (short)"
);
myGroup$add_question(
  "testQuestion2",
  questionTexts = "Second question",
  type="radio"
);
myGroup$questions$testQuestion2$add_answer_option(
  "option1",
  "First option"
);
myGroup$questions$testQuestion2$add_answer_option(
  "option2",
  "Second option"
);

cat(as.character(myGroup$export_to_lsg()));
```

limer_base64_to_df *Convert base64 encoded data to a data frame*

Description

This function converts raw base64 results into a data frame. It was adapted by Gjalt-Jorn Peters from a function originally written by Andrew Heiss.

Usage

```
limer_base64_to_df(
  x,
  encoding = NULL,
  iconvArgs = list(from = "UTF-8", to = "UTF-8")
)
```

Arguments

x	...
encoding	Either NULL or an encoding to pass to textConnection().
iconvArgs	Arguments to pass to [base::iconv().

Examples

```
## Not run:
limer_base64_to_df()

## End(Not run)
```

limer_call_limer *Make a call to the LimeSurvey API*

Description

This function makes a generic call to the LimeSurvey API. See https://www.limesurvey.org/manual/RemoteControl_2_API for API documentation. It was adapted by Gjalt-Jorn Peters from a function originally written by Andrew Heiss.

Usage

```
limer_call_limer(method, params = list(), ..., encoding = "utf-8")
```

Arguments

method	API function to call. Full lis Defaults to value set in options().
params	Optional named list of parameters to pass to the function.
...	Other arguments passed to POST.
encoding	The encoding to use

Value

Results from the API (sometimes plain text, sometimes base64-encoded text).

Examples

```
## Not run:
limer_call_limer(method = "list_surveys")
limer_call_limer(method = "get_summary",
                 params = list(iSurveyID = 238481,
                               sStatname = "completed_responses"))

## End(Not run)
```

---

limer_get_participant_property

Get a participant property from a LimeSurvey survey

Description

This function exports and downloads a participant property from a LimeSurvey survey. It was adapted by Gjalt-Jorn Peters from a function originally written by Andrew Heiss.

Usage

```
limer_get_participant_property(
  iSurveyID,
  aTokenQueryProperties,
  aTokenProperties
)
```

Arguments

iSurveyID	...
aTokenQueryProperties	...
aTokenProperties	...

Examples

```
## Not run:
limer_get_participant_property(
  iSurveyID = 12345,
  aTokenQueryProperties = 1,
  aTokenProperties = list("attribute_1")
);

## End(Not run)
```

`limer_get_participants` *Export list of participants from a LimeSurvey survey*

Description

This function exports and downloads the list of participants from a LimeSurvey survey.

Usage

```
limer_get_participants(iSurveyID, iStart, iLimit, bUnused, aAttributes)
```

Arguments

iSurveyID	...
iStart	...
iLimit	...
bUnused	...
aAttributes	...

Examples

```
## Not run:
limer_get_participants(12345, iStart=1, iLimit=10, bUnused=FALSE,
                                  aAttributes=c('attribute_1','attribute_2'))
limer_get_participants(12345, iStart=1, iLimit=10, bUnused=FALSE, aAttributes=FALSE)

## End(Not run)
```

limer_get_responses *Export data from a LimeSurvey survey*

Description

This function exports and downloads data from a LimeSurvey survey. It was adapted by Gjalt-Jorn Peters from a function originally written by Andrew Heiss.

Usage

```
limer_get_responses(
  iSurveyID,
  sDocumentType = "csv",
  sLanguageCode = NULL,
  sCompletionStatus = "complete",
  sHeadingType = "code",
  sResponseType = "long",
  encoding_limerCall = NULL,
  encoding_txtCon = NULL,
  ...
)
```

Arguments

iSurveyID	The LimeSurvey survey identifier (the sid, usually 6 digits long).
sDocumentType	...
sLanguageCode	...
sCompletionStatus	...
sHeadingType	...
sResponseType	...
encoding_limerCall	The encoding to pass to the limer_call_limer() function.
encoding_txtCon	The encoding to pass to limer_base64_to_df().
...	Further arguments to limer_call_limer.

Examples

```
## Not run:
limer_get_responses(12345)

## End(Not run)
```

limer_release_session_key

Release a LimeSurvey API session key

Description

This function clears the LimeSurvey API session key currently in use, effectively logging out. This function was adapted by Gjalt-Jorn Peters from a function originally written by Andrew Heiss.

Usage

```
limer_release_session_key()
```

Examples

```
## Not run:
limesurvey::limer_release_session_key()

## End(Not run)
```

limer_upload_tsv_to_limesurvey

Upload a tab separated limesurvey text file

Description

To use this function, you need to setup R for the LimeSuevey API, as described in `vignette("limesurvey_api_setup")`.

Usage

```
limer_upload_tsv_to_limesurvey(
  ls_txt_path,
  open_url = "preview",
  hostname = getOption("lime_api")
)
```

Arguments

`ls_txt_path`	Path of the limesurvey text file
`open_url`	Character vector containing one or more of the strings in `c("preview", "survey", "none")`. If it contains "none", nothing is done. `"preview"` (the default) previews the survey on limesurvey. `"survey"` opens the survey summary.
`hostname`	The host to use (if not using the one specified in the options). If no hostname is specified in the `'lime_api'` option and no host name is passed as `hostname`, the subdomain stored in `limonaid::opts$get("ls_subdomain")` will be combined with the domain stored in `limonaid::opts$get("ls_domain")` to create the host name. You can change these using the `limonaid::opts$set()` function.

Value

The value of the id of your survey in the specified LimeSurvey installation,

Examples

```
## Not run:
### Log into the LimeSurvey API:
limonaid::get_session_key();

### Upload a tab separated values file:
limer_upload_tsv_to_limesurvey(
  "PATH/TO/YOUR/LIMESURVEY/TXT FILE",
  c("preview", "survey")
);

## End(Not run)
```

---

ls_apply_script_bits *Apply specific code bits from LimeSurvey data import R script*

Description

This function applies specific code bits from the LimeSurvey data import R script, read by ls_parse_data_import_script(for example to update variable names, set labels, etc.

Usage

```
ls_apply_script_bits(
  data,
  scriptBits,
  setVarNames = TRUE,
  setLabels = TRUE,
  convertToCharacter = FALSE,
  convertToFactor = FALSE,
  categoricalQuestions = NULL,
  massConvertToNumeric = TRUE,
  silent = limonaid::opts$get("silent"),
  sticky = limonaid::opts$get("sticky")
)
```

Arguments

data	The dataframe.
scriptBits	The object returned by the call to ls_parse_data_import_script().
setVarNames, setLabels, convertToCharacter, convertToFactor	Whether to set variable names or labels, or convert to character or factor, using the code isolated using the specified regular expression.

categoricalQuestions
: Which variables (specified using LimeSurvey variable names) are considered categorical questions; for these, the script to convert the variables to factors, as extracted from the LimeSurvey import file, is applied.

massConvertToNumeric
: Whether to convert all variables to numeric using massConvertToNumeric.

silent
: Whether to be silent or verbose ('chatty').

sticky
: Whether to make labels sticky (requires the sticky package).

Value

The dataframe.

---

ls_eq_build *Building LimeSurvey Expression Manager equations*

Description

These are a set of really basic functions that facilitate building LimeSurvey Expression Manager (LSEM) equations.

Usage

```
ls_eq_build(lhs, operator, rhs)

ls_eq_is(varCode, value, naok = TRUE)

ls_eq_isChecked(varCode, naok = TRUE)

ls_eq_isUnchecked(varCode, naok = TRUE)

ls_eq_if(cond, ifExpr, elseExpr)

ls_eq_ifRegex(regex, varCode, ifExpr, elseExpr, naok = TRUE)

ls_eq_brace(expr)

ls_eq_quote(expr)
```

Arguments

lhs
: The left-hand side expression.

operator
: The operator.

rhs
: The right-hand side expression.

varCode
: A LimeSurvey variable code.

value	A value.
naok	Whether to append ".NAOK" to the variable code.
cond	A condition, for example created by ls_eq_build() or ls_eq_is().
ifExpr, elseExpr, expr	An expression.
regex	A regular expression.

Details

ls_eq_build() just pastes together its three arguments in the same order using a space as separator. So it's mostly used for clarity when building LSEM equations.

ls_eq_is() uses ls_eq_build() to specify a logical expression that is true when varCode equals value.

ls_eq_if() builds an if/then/else expression; if cond evaluates to TRUE, the LSEM uses ifExpr; otherwise, it uses elseExpr.

ls_eq_ifRegex checks a question against a regular expression.

ls_eq_isChecked() and ls_eq_isUnchecked() return an expression evaluating whether a checkbox is checked (or not).

ls_eq_brace() simply embraces expr, an expression (i.e. it prepends { and appends }).

ls_eq_quote() simply embraces expr, an expression (i.e. it prepends ' and appends ').

Value

A character vector.

Examples

```
ls_eq_build("questionCode", "==", "Y");
```

---

ls_eq_nestIfs *Create a series of nested LSEM* if *equations*

Description

This function takes a series of conditions and corresponding values, and builds an equation consisting of nested if statements.

Usage

```
ls_eq_nestIfs(conditions, values, elseExpr, quoteValues = FALSE)
```

Arguments

conditions	The conditions - in the right order, i.e. in the produced expression if nested if statements, the first condition in this list will be checked first, then the second, etc.
values	The values corresponding to each condition (in the same order!).
elseExpr	The value to return if there are no matches.
quoteValues	Whether to use double quotes to quote the values.

Value

A character value.

Examples

```
### Relatively simple example with four levels of nesting
ls_eq_nestIfs(c("age.NAOK > 80",
                "age.NAOK > 65",
                "age.NAOK > 40",
                "age.NAOK > 20"),
              c("Respectable",
                "Roughly retired",
                "Roughly middle-aged",
                "Quite young"),
              "Very young",
              quoteValue=TRUE);
```

---

ls_import_data *Reading LimeSurvey data exported to R*

Description

This function can be used to import files exported by LimeSurvey.

Usage

```
ls_import_data(
  sid = NULL,
  path = NULL,
  datafile = NULL,
  dataPath = NULL,
  datafileRegEx = NULL,
  scriptfile = NULL,
  setVarNames = TRUE,
  setLabels = TRUE,
  convertToCharacter = FALSE,
  convertToFactor = FALSE,
  categoricalQuestions = NULL,
```

```
  massConvertToNumeric = TRUE,
  dataHasVarNames = TRUE,
  dataEncoding = "UTF-8-BOM",
  scriptEncoding = NULL,
  sticky = limonaid::opts$get("sticky"),
  silent = limonaid::opts$get("silent")
)
```

Arguments

sid, path	The easiest way to load data is to not rename the datafile and script file downloaded from LimeSurvey (so that both contain the Survey Identifier, the sid) and simply specify that sid and the path where both files are stored.
datafile	The path and filename of the file containing the data (comma separated values).
dataPath, datafileRegEx	Path containing datafiles: this can be used to read multiple datafiles, if the data is split between those. This is useful when downloading the entire datafile isn't possible because of server restrictions, for example when the processing time for the script in LimeSurvey that generates the datafiles is limited. In that case, the data can be downloaded in portions, and specifying a path here enables reading all datafiles in one go. Use the regular expression to indicate which files in the path should be read.
scriptfile	The path and filename of the file containing the R script to import the data.
setVarNames, setLabels, convertToCharacter, convertToFactor	Whether to set variable names or labels, or convert to character or factor, using the code isolated using the specified regular expression.
categoricalQuestions	Which variables (specified using LimeSurvey variable names) are considered categorical questions; for these, the script to convert the variables to factors, as extracted from the LimeSurvey import file, is applied.
massConvertToNumeric	Whether to convert all variables to numeric using massConvertToNumeric.
dataHasVarNames	Whether the variable names are included as header (first line) in the comma separated values file (data file).
dataEncoding, scriptEncoding	The encoding of the files; can be used to override the setting in the limonaid options (i.e. in opts) in the encoding field (the default value is "UTF-8").
sticky	Whether to make labels sticky (requires the sticky package).
silent	Whether to be silent or verbose ('chatty').

Details

This function was intended to make importing data from LimeSurvey a bit easier. The default settings used by LimeSurvey are not always convenient, and this function provides a bit more control.

Value

The dataframe.

Examples

```
## Not run:
### Of course, you need valid LimeSurvey files. This is an example of
### what you'd do if you have them, assuming you specified that path
### containing the data in 'dataPath', the name of the datafile in
### 'dataFileName', the name of the script file in 'dataLoadScriptName',
### and that you only want variables 'informedConsent', 'gender', 'hasJob',
### 'currentEducation', 'prevEducation', and 'country' to be converted to
### factors.
dat <- limonaid::ls_import_data(
  datafile = file.path(dataPath, dataFileName),
  scriptfile = file.path(dataPath, dataLoadScriptName),
  categoricalQuestions = c('informedConsent',
                           'gender',
                           'hasJob',
                           'currentEducation',
                           'prevEducation',
                           'country')
);

## End(Not run)
```

---

ls_parse_data_import_script

Extract specific code bits from LimeSurvey data import R script

---

Description

This function extracts specific code bits from the LimeSurvey data import R script, which can then be applied to imported data using `ls_apply_script_bits()`, for example to update variable names, set labels, etc.

Usage

```
ls_parse_data_import_script(
  scriptfile = NULL,
  scriptEncoding = limonaid::opts$get("encoding"),
  silent = limonaid::opts$get("silent")
)
```

Arguments

scriptfile	The path and filename of the script file.
scriptEncoding	The encoding of the script file; can be used to override the setting in the limonaid options (i.e. in opts) in the encoding field (the default value is "UTF-8").
silent	Whether to be silent or verbose ('chatty').

Value

A list with four components.

---

ls_process_labels *A function to conveniently process LimeSurvey labels*

Description

This function is meant to quickly parse the variable labels set by LimeSurvey. It works particularly well with dual anchor array questions, where the left and right anchors as well as the subquestions are extracted automatically.

Usage

```
ls_process_labels(
  data,
  varnameRegExPairs = NULL,
  lengthToWrap = 50,
  lengthToWrapAnchors = 20,
  labelExtractionRegExPair = limonaid::opts$get("labelExtractionRegExPair"),
  leftAnchorRegExPairs = limonaid::opts$get("leftAnchorRegExPairs"),
  rightAnchorRegExPairs = limonaid::opts$get("rightAnchorRegExPairs")
)
```

Arguments

data	The dataframe as produced by ls_import_data().
varnameRegExPairs	Pairs of regular expressions to replace in the variable names. This is useful when some pattern can be applied to the variable names to, for example, add underscores te denote different parts of the variable name. This has to be a list of character vectors that each have length 2.
lengthToWrap	At how many characters to wrap the subquestions.
lengthToWrapAnchors	At how many characters to wrap the anchors.
labelExtractionRegExPair	The regular expression pair used to extract the labels.

leftAnchorRegExPairs
: The regular expression pairs to use to extract the left anchors.

rightAnchorRegExPairs
: The regular expression pairs to use to extract the right anchors.

Details

This function processes LimeSurvey variable labels and applies regular expressions to automatically extract subquestions and left and right anchors.

Value

A dataframe.

Examples

```
### No examples provided yet; this would require data to be included,
### and that's not available yet.
```

---

ls_read_tsv *Read a LimeSurvey Tab-Separated Values file*

Description

Read a LimeSurvey Tab-Separated Values file

Usage

```
ls_read_tsv(file, encoding = limonaid::opts$get("encoding"))
```

Arguments

file	The filename to read.
encoding	The encoding to use when reading the file.

Value

A dataframe.

Examples

```
### Get location of one of the example files
exampleFile <-
  system.file(
    "extdata",
    "export-of-survey-with-one-question-as-tsv.txt",
    package = "limonaid"
  );

### Import file
lsrv <- limonaid::ls_read_tsv(exampleFile);
```

---

ls_recodeTable_to_equations

Recode a set of LS variables codes and values into LSEM equations

---

Description

This function takes a dataframe with LimeSurvey (LS) variable codes and values, and builds a nested set of LimeSurvey Equation Manager (LSEM) if/then/else equations where the variable code in each row (in the `varCodeCol`) is compared to the corresponding value (i.e. the value in the same row in the `valueCol` column) using the operator specified in that row in the `operatorCol` column (or the == operator, if no operator is specified). In the case of a match, the value in the corresponding `recodeToCol` column is returned. If there is no match, the comparison on the next row is evaluated, all the way down. If nothing matches, the `elseExpr` is returned.

Usage

```
ls_recodeTable_to_equations(
  data,
  varCodeCol = limonaid::opts$get("recTab2Eq_varCodeCol"),
  valueCol = limonaid::opts$get("recTab2Eq_valueCol"),
  recodeToCol = limonaid::opts$get("recTab2Eq_recodeToCol"),
  operatorCol = limonaid::opts$get("recTab2Eq_operatorCol"),
  elseExpr = limonaid::opts$get("eq_elseExpr"),
  naok = TRUE
)
```

Arguments

`data`	The dataframe.
`varCodeCol`	The name or index of the column with the variable code.
`valueCol`	The name or index of the column with the values to compare the value of the variable code to.
`recodeToCol`	The name or index of the column with the value to return in the case of a match.
`operatorCol`	The name or index of the column with the operator used to build each logical expression.

elseExpr	The value to return if there are no matches.
naok	Whether to append ".NAOK" to variable codes by default.

Value

A character value.

Examples

```
### Provide later
```

`ls_tsv_get_group_rows` *Get all group rows from a LimeSurvey survey dataframe*

Description

Get all group rows from a LimeSurvey survey dataframe

Usage

```
ls_tsv_get_group_rows(data)
```

Arguments

data	The LimeSurvey survey dataframe.

Value

A dataframe with the rows.

Examples

```
### Add
```

ls_tsv_get_rows *Display rows from a LimeSurvey dataframe that meet a criterion*

Description

Display rows from a LimeSurvey dataframe that meet a criterion

Usage

```
ls_tsv_get_rows(data, ...)
```

Arguments

data	The datafram.
...	For now, one column/value pair (the criterion).

Value

The rows, passed through `ls_tsv_rows()`.

Examples

```
### Add later
```

ls_tsv_rows *Display one or more rows from a LimeSurvey dataframe, omitting empty columns*

Description

Display one or more rows from a LimeSurvey dataframe, omitting empty columns

Usage

```
ls_tsv_rows(dfRows)
```

Arguments

dfRows	A dataframe with the selected rows.

Value

The rows, with empty columns omitted.

Examples

```
### Add later.
```

ls_write_lsg *Write a data frame to a LimeSurvey Tab Separated Values file*

Description

Write a data frame to a LimeSurvey Tab Separated Values file

Usage

```
ls_write_lsg(
  data,
  file,
  encoding = limonaid::opts$get("encoding"),
  preventOverwriting = limonaid::opts$get("preventOverwriting"),
  silent = limonaid::opts$get("silent")
)
```

Arguments

data	The dataframe to write.
file	The file to write to.
encoding	The encoding to write to.
preventOverwriting	Whether to prevent overwriting, should the target file exist, already.
silent	Whether to be silent or chatty.

Value

The dataframe, adapted for writing, invisibly.

Examples

```
### Add example once something is available.
```

ls_write_tsv *Write a data frame to a LimeSurvey Tab Separated Values file*

Description

Write a data frame to a LimeSurvey Tab Separated Values file

Usage

```
ls_write_tsv(
  data,
  file,
  encoding = limonaid::opts$get("encoding"),
  preventOverwriting = limonaid::opts$get("preventOverwriting"),
  silent = limonaid::opts$get("silent")
)
```

Arguments

data	The dataframe to write.
file	The file to write to.
encoding	The encoding to write to.
preventOverwriting	Whether to prevent overwriting, should the target file exist, already.
silent	Whether to be silent or chatty.

Value

The dataframe, adapted for writing, invisibly.

Examples

```
### Add example once something is available.
```

---

lsdf_for_language *Produce the dataframe containing the survey for one language*

Description

This is used when exporting surveys to LimeSurvey's TSV format.

Usage

```
lsdf_for_language(
  language,
  groups,
  exportGroupIdMapping,
  exportQuestionIdMapping,
  backupLanguage,
  silent = limonaid::opts$get("silent")
)
```

Arguments

language	The language for which to produce the data frame.
groups	The groups object in the Survey object.
exportGroupIdMapping, exportQuestionIdMapping	Used to map Survey object identifier onto the identifier model used in the LimeSurvey TSV.
backupLanguage	The language to get content from if not available in the primary language
silent	Whether to be silent or chatty.

Value

Invisibly, the Survey object.

---

mail_registered_participant *Mail registered participant*

Description

This function was adapted by Gjalt-Jorn Peters from a function originally written by Andrew Heiss.

Usage

```
mail_registered_participant(iSurveyID, tid)
```

Arguments

iSurveyID	...
tid	...

Examples

```
## Not run:
limonaid::mail_registered_participant(iSurveyID = 123456, tid = 2)

## End(Not run)
```

massConvertToNumeric *Converting many dataframe columns to numeric*

Description

This function makes it easy to convert many dataframe columns to numeric.

Usage

```
massConvertToNumeric(
  dat,
  byFactorLabel = FALSE,
  ignoreCharacter = TRUE,
  stringsAsFactors = FALSE
)
```

Arguments

dat	The dataframe with the columns.
byFactorLabel	When converting factors, whether to do this by their label value (TRUE) or their level value (FALSE).
ignoreCharacter	Whether to convert (FALSE) or ignore (TRUE) character vectors.
stringsAsFactors	In the returned dataframe, whether to return string (character) vectors as factors or not.

Value

A data.frame.

Examples

```
### Create a dataset
a <- data.frame(var1 = factor(1:4),
                var2 = as.character(5:6),
                stringsAsFactors=FALSE);

### Ignores var2
b <- massConvertToNumeric(a);

### Converts var2
c <- massConvertToNumeric(a,
                          ignoreCharacter = FALSE);
```

opts *Options for the limonaid package*

Description

The `limonaid::opts` object contains three functions to set, get, and reset options used by the escalc package. Use `limonaid::opts$set` to set options, `limonaid::opts$get` to get options, or `limonaid::opts$reset` to reset specific or all options to their default values.

Usage

```
opts
```

Format

An object of class `list` of length 4.

Details

It is normally not necessary to get or set `limonaid` options.

The following arguments can be passed:

... For `limonaid::opts$set`, the dots can be used to specify the options to set, in the format `option = value`, for example, `silent = FALSE`. For `limonaid::opts$reset`, a list of options to be reset can be passed.

option For `limonaid::opts$set`, the name of the option to set.

default For `limonaid::opts$get`, the default value to return if the option has not been manually specified.

The following options can be set:

silent Whether to be chatty or silent.

encoding The encoding to use when writing files.

preventOverwriting The name of the column with the missing values.

Examples

```
### Get the default silent setting
limonaid::opts$get('silent');

### Set it to FALSE
limonaid::opts$set(silent = FALSE);

### Check that it worked
limonaid::opts$get('silent');

### Reset this option to its default value
```

```
limonaid::opts$reset('silent');

### Check that the reset worked, too
limonaid::opts$get('silent');
```

`processLimeSurveyDropouts` *Process LimeSurvey dropouts*

Description

This function makes it easy to parse the dropouts from a LimeSurvey questionnaire.

Usage

```
processLimeSurveyDropouts(lastpage, pagenames = NULL, relevantPagenames = NULL)
```

Arguments

`lastpage`	A vector with the 'lastpage' variable as LimeSurvey stores it (an integer denoting the last page a participant visited, in other words, where they dropped out).
`pagenames`	Optional: names for each page.
`relevantPagenames`	Optional: the names of those pages that should be included.

Details

This will be described more in detail in a forthcoming publications.

Value

A list with information about the dropout, including plots.

Examples

```
limonaid::processLimeSurveyDropouts(c(1,2,1,1,2,3,2,2,3,2,1));
```

`Question` *R6 Class representing a LimeSurvey question*

Description

R6 Class representing a LimeSurvey question

R6 Class representing a LimeSurvey question

Details

A question has at least a code and a primary language.

The human-readable question types are (with some additional variants also being valid, in any case the literal labels used at https://www.limesurvey.org/manual/Question_object_types#Current_question_types):

- "array dual scale"
- "5 point choice"
- "5 point array"
- "10 point array"
- "yes/no/uncertain array"
- "date"
- "increase/same/decrease array"
- "array" (this is the "array (flexible labels)" type)
- "gender"
- "array by column"
- "language switch"
- "multiple numerical input",
- "radio" (this is the "list" type)
- "checkboxes" (this is the "multiple choice" type)
- "numerical input",
- "list with comment"
- "multiple choice with comments"
- "multiple short text"
- "ranking"
- "short text"
- "long text"
- "huge text"
- "text display"
- "yes/no"

- "multiple texts array",
- "multiple dropdown array"
- "file"
- "dropdown"
- "equation".

Public fields

`code` The code of the question.

`id` The identifier of the question (a unique number in a survey).

`gid` The identifier of the group to which this question belongs.

`sid` The identifier of the survey to which this question belongs.

`type` The question type.

`lsType` The question type in LimeSurvey's format.

`questionTexts` The question text(s) in all languages.

`helpTexts` The question help text(s) in all languages.

`relevance` The relevance.

`validation` The question's validation.

`language` The primary language of the question.

`additional_languages` Any additional languages for the title and description elements.

`answerOptions` The answer options in the question.

`subquestions` The subquestions in the question.

`parent_qid` The question identifier of the parent question (or 0).

`mandatory` Whether the question is mandatory (`Y` or `N`).

`other` Whether the question has an 'other' option (`Y` or `N`).

`otherReplaceTexts` If the question has an 'other' option, its label if the default label should be overwritten (multilingual).

`default` The default value.

`same_default` Not entirely sure what this does.

`array_filter` The question code of the array filter question to apply.

`question_order` The question order (starts at 0)

`cssclass` The CSS class(es) to apply to this question.

`hide_tip` Whether to hide the tip (`Y` or `N`).

`otherOptions` Any additional options, stored as a named list by assigning `as.list(...)`.

Active bindings

`has_subquestions` Whether the question has subquestions.

`has_answerOptions` Whether the question has answer options

Methods

Public methods:

- Question$new()
- Question$add_answer_option()
- Question$add_subquestion()
- Question$xmlExport_row_question()
- Question$xmlExport_row_subquestions()
- Question$xmlExport_row_question_l10ns()
- Question$xmlExport_row_answers()
- Question$xmlExport_row_answer_l10ns()
- Question$xmlExport_row_attributes()
- Question$clone()

Method `new()`**:** Create a new question object. Most of this text comes directly from the TSV manual page at https://www.limesurvey.org/manual/Tab_Separated_Value_survey_structure, so please see that page for more details.

Usage:

```
Question$new(
  code,
  type = NULL,
  lsType = NULL,
  id = NULL,
  gid = NULL,
  sid = NULL,
  questionTexts = "",
  helpTexts = "",
  relevance = 1,
  validation = "",
  mandatory = "N",
  parent_qid = 0,
  other = "N",
  otherReplaceTexts = "",
  default = "",
  same_default = "0",
  array_filter = "",
  cssclass = "",
  hide_tip = "",
  language = "en",
  additional_languages = "",
  new_id_fun = NULL,
  question_order = 0,
  ...
)
```

Arguments:

`code` The question code.

`type` The human-readable question type (see details).

`lsType` The type as LimeSurvey type ("1"; "5"; "A" to "Y", except "J", "V" and "W"; "!"; ":"; ";"; "*"; or "|" –see https://www.limesurvey.org/manual/Question_object_types#Current_question_types).

`id` The identifier of the question (in a survey).

`gid` The identifier of the group to which this question belongs.

`sid` The identifier of the survey to which this question belongs.

`questionTexts` The question text(s).

`helpTexts` The help text(s).

`relevance` The question's relevance equation.

`validation` The question's validation.

`mandatory` Whether the question is mandatory (`Y` or `N`);.

`parent_qid` The question identifier of the parent question (or 0).

`other` Whether the question has an 'other' option (`Y` or `N`).

`otherReplaceTexts` If the question has an 'other' option, its label if the default label should be overwritten (multilingual).

`default` The default value.

`same_default` `Y` for true, in which case any default value set for the primary language applies to other languages.

`array_filter` The question code of the array filter question to apply.

`cssclass` The CSS class(es) to apply to this question.

`hide_tip` Whether to hide the tip (`Y` or `N`).

`language` The question's primary language.

`additional_languages` Any additional languages

`new_id_fun` A function to set identifiers (for XML exports, which mirrors MySQL tables and so needs identifiers). By default, new question objects receive this function from the group containing them; and groups receive it from the survey containing them. This ensures that identifiers are always unique in a survey (despite question objects not being able to 'see' anything in the group containing them, and group objects not being able to 'see' anything in the survey containing them; because they 'received' this function from the parent object, and it 'bubbles down' through groups to the questions, those functions still get and set a private identifier property in the 'top-most' object).

`question_order` The question order (starts at 0)

`...` Any additional options, stored as a named list in the `otherOptions` property by assigning `as.list(...)`.

Returns: A new `Question` object.

Method `add_answer_option()`**:** Add an answer option to a question. Most of this text comes directly from the TSV manual page at https://www.limesurvey.org/manual/Tab_Separated_Value_survey_structure, so please see that page for more details.

Usage:

```
Question$add_answer_option(
  code,
  optionTexts,
```

```
  type.scale = 0,
  relevance = "",
  assessment.value = 0,
  sort.order = NULL
)
```

Arguments:

`code` The answer option code.

`optionTexts` The answer option text(s).

`type.scale` `0` or `1` (e.g. for dual-scale; 'scale_id').

`relevance` The answer option's relevance equation.

`assessment.value` If using assessment, this is the assessment value for the answer ('assessment_value').

`sort.order` The sort order (to manually specify); starts at 0. If left empty, new options are added at the bottom.

Returns: Invisibly, the question object.

Method `add_subquestion()`**:** Add a subquestion to a question. Most of this text comes directly from the TSV manual page at https://www.limesurvey.org/manual/Tab_Separated_Value_survey_structure, so please see that page for more details.

Usage:

```
Question$add_subquestion(
  code,
  subquestionTexts,
  relevance = "",
  helpTexts = NULL,
  type.scale = 0,
  validation = "",
  mandatory = "",
  default = "",
  same_default = "",
  subquestion.order = NULL
)
```

Arguments:

`code` The subquestions code.

`subquestionTexts` The subquestion text(s).

`relevance` When to show this subquestion.

`helpTexts` As far as I know not yet implemented in LimeSurvey; but the TSV help page says "(Future) to support subquestion-level help".

`type.scale` `0` or `1`, depending upon question type (e.g. array text will have two scales)0 or 1, depending upon question type (e.g. array text will have two scales)."

`validation` As far as I know not yet implemented in LimeSurvey; but the TSV help page says "(Future) to support subquestion-level regular expression validation (e.g. for address parts)"

`mandatory` As far as I know not yet implemented in LimeSurvey; but the TSV help page says "(Future) to support subquestion-level mandatory (e.g. make only a few subquestions mandatory)"

`default` If set, then this is the default value for the subquestion (inserted into defaultvalues table).

`same_default` If set, then the default for the primary language is used for all other languages.

`subquestion.order` The subquestion order (to manually specify); starts at 0. If left empty, new options are added at the bottom.

Returns: Invisibly, the question object.

Method `xmlExport_row_question()`**:** Export the question in XML format (for lss, lsg, or lsq files).

Usage:

```
Question$xmlExport_row_question(silent = limonaid::opts$get("silent"))
```

Arguments:

`silent` Whether to be silent or chatty.

Returns: The produced XML

Method `xmlExport_row_subquestions()`**:** Export the question in XML format (for lss, lsg, or lsq files).

Usage:

```
Question$xmlExport_row_subquestions(
  returnRows = FALSE,
  silent = limonaid::opts$get("silent")
)
```

Arguments:

`returnRows` Whether to return a list with each row as element, or a `rows` node (as `xml2` object) containing each row as nodes

`silent` Whether to be silent or chatty.

Returns: The produced XML

Method `xmlExport_row_question_l10ns()`**:** Export the question's question_l10ns info in a list of XML nodes.

Usage:

```
Question$xmlExport_row_question_l10ns(
  id_fun = private$new_id(),
  silent = limonaid::opts$get("silent")
)
```

Arguments:

`id_fun` The function to use to produce unique identifiers

`silent` Whether to be silent or chatty.

Returns: The produced list of XML nodes

Method `xmlExport_row_answers()`**:** Export the answer options in XML format (for lss, lsg, or lsq files).

Usage:

```
Question$xmlExport_row_answers(
  returnRows = FALSE,
  silent = limonaid::opts$get("silent")
)
```

Arguments:

`returnRows` Whether to return a list with each row as element, or a `rows` node (as `xml2` object) containing each row as nodes

`silent` Whether to be silent or chatty.

Returns: The produced XML

Method `xmlExport_row_answer_l10ns()`**:** Export the question's answer optoin l10ns info in a list of XML nodes.

Usage:

```
Question$xmlExport_row_answer_l10ns(
  id_fun = private$new_id,
  silent = limonaid::opts$get("silent")
)
```

Arguments:

`id_fun` The function to use to produce unique identifiers

`silent` Whether to be silent or chatty.

Returns: The produced list of XML nodes

Method `xmlExport_row_attributes()`**:** Export the question's attributes in a list of XML nodes.

Usage:

```
Question$xmlExport_row_attributes(silent = limonaid::opts$get("silent"))
```

Arguments:

`silent` Whether to be silent or chatty.

Returns: The produced list of XML nodes

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
Question$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

repeatStr *Repeat a string a number of times*

Description

Repeat a string a number of times

Usage

```
repeatStr(n = 1, str = " ")
```

Arguments

n, str	Normally, respectively the frequency with which to repeat the string and the string to repeat; but the order of the inputs can be switched as well.

Value

A character vector of length 1.

Examples

```
### 10 spaces:
repStr(10);

### Three euro symbols:
repStr("\u20ac", 3);
```

Survey *R6 Class representing a LimeSurvey survey*

Description

R6 Class representing a LimeSurvey survey

R6 Class representing a LimeSurvey survey

Details

Create and work with a Survey to programmatically (or interactively) create a survey, export it to a tab separated values file, and import it to LimeSurvey.

Public fields

`titles` The title of the survey in the primary language and any additional languages

`descriptions` The descriptions of the survey in the primary language and any additional languages

`welcomeTexts` The welcome texts of the survey in the primary language and any additional languages

`endTexts` The end texts of the survey in the primary language and any additional languages

`endURLs` The end URLs of the survey in the primary language and any additional languages

`endURLdescriptions` The end URL descriptions of the survey in the primary language and any additional languages

`dateformats` The date format to use in the primary language and any additional languages; the index of the option from the dropdown in LimeSurvey (6 is the ISO standard, "YYYY-MM-DD").

`numberformats` The number format to use in the primary language and any additional languages (for periods as decimal marks, `0`; for commas as decimal marks, `1`).

`sid` The unique survey identifier; if this is free when importing the survey, this will be used.

`gsid` The Survey Group identifier.

`admin` The name of the survey administrator

`adminemail` The email address of the survey administrator

`anonymized` Whether the survey uses anonymized responses (`Y` or `N`).

`faxto` The contents of the "Fax to" field

`format` How to present the survey (`Q` for question by question; `G` for group by group; and `A` for all in one).

`savetimings` Whether to save timings of responses (`Y` or `N`).

`template` The name of the LimeSurvey theme to use.

`language` The primary language of the survey.

`additional_languages` Any additional languages the survey uses.

`datestamp` Whether to datestamp responses (`Y` or `N`).

`usecookie` Whether to use cookies to enable answer persistence.

`allowregister` Whether to allow public registration (`Y` or `N`).

`allowsave` Whether to allow users to save their responses and returning later (`Y` or `N`).

`autonumber_start` Where to start autonumbering

`autoredirect` Whether to automatically redirect users to a URL (`Y` or `N`).

`allowprev` Whether to allow users to return to previous pages (`Y` or `N`).

`printanswers` Whether to allow printing of answer (`Y` or `N`).

`ipaddr` Whether to store IP addresses (`Y` or `N`).

`refurl` Whether to store the referring URL (`Y` or `N`).

`showsurveypolicynotice` Whether to show the data policy notice (`Y` or `N`).

`publicstatistics` Whether to have public statistics (`Y` or `N`).

`publicgraphs` Whether to show graphs in public statistics (`Y` or `N`).

`listpublic` Whether to list the survey publicly (`Y` or `N`).

`htmlemail` Whether to use HTML format for token emails (`Y` or `N`).

`sendconfirmation` Whether to send confirmation emails (`Y` or `N`).

`tokenanswerspersistence` Whether to use token-based response persistence (`Y` or `N`).

`assessments` Whether to use assessments (`Y` or `N`).

`usecaptcha` Whether to use CAPTCHA's (`Y` or `N`).

`usetokens` Whether to use tokens (`Y` or `N`).

`bounce_email` Where bouncing emails should be sent.

`emailresponseto` Where detailed admin notifications emails should be sent.

`emailnotificationto` Where a notification should be sent for new responses.

`tokenlength` The token length.

`showxquestions` Whether to show "There are X questions in this survey" (`Y` or `N`).

`showgroupinfo` Whether to show group name and info (`B` for both, `?`, or `X` to show nothing).

`shownoanswer` Whether to show the "No answer" option (`Y` or `N`).

`showqnumcode` Whether to show answer codes or numbers (`Y`, `N`, or `X` to show nothing).

`bounceprocessing` Whether to process bouncing emails? (`Y` or `N`).

`showwelcome` Whether to show the welcome page (`Y` or `N`).

`showprogress` Whether to show the progress bar (`Y` or `N`).

`questionindex` Whether to show the question index (`0` to disable; can also be set to incremental or full (`1` and `2`?)).

`navigationdelay` The navigation delay in seconds

`nokeyboard` Whether to show the on-screen keyboard (`Y` or `N`).

`alloweditaftercompletion` Whether to allow multiple reponses (`N`) or to allow updating responses with one token (`Y`)?

`googleanalyticsstyle` The google analytics settings; `0` for None, other values for other settings.

`googleanalyticsapikey` The google analytics API key.

`groups` The groups in the survey.

`tsvData` Used to store the dataframe saved to a file as tab separated values.

Active bindings

`get_group_ids` A list of all group ids.

`get_group_titles` A list of all group ids.

Methods

Public methods:

- Survey$new()
- Survey$add_group()
- Survey$add_question()
- Survey$export_to_tsv()
- Survey$find_group_id()
- Survey$clone()

Method `new()`**:** Create a new survey object.

Usage:

```
Survey$new(
  titles,
  descriptions = "",
  welcomeTexts = "",
  endTexts = "",
  endURLs = "",
  endURLdescriptions = "",
  dateformats = 6,
  numberformats = 0,
  sid = 1,
  gsid = 1,
  admin = "Admin Name",
  adminemail = "email@add.ress",
  anonymized = "Y",
  faxto = "",
  format = "G",
  savetimings = "Y",
  template = "vanilla",
  language = "en",
  additional_languages = "",
  datestamp = "Y",
  usecookie = "N",
  allowregister = "N",
  allowsave = "N",
  autonumber_start = 0,
  autoredirect = "Y",
  allowprev = "N",
  printanswers = "N",
  ipaddr = "N",
  refurl = "N",
  showsurveypolicynotice = "0",
  publicstatistics = "N",
  publicgraphs = "N",
  listpublic = "N",
  htmlemail = "Y",
  sendconfirmation = "N",
```

```
  tokenanswerspersistence = "N",
  assessments = "N",
  usecaptcha = "N",
  usetokens = "N",
  bounce_email = "",
  emailresponseto = "",
  emailnotificationto = "",
  tokenlength = 15,
  showxquestions = "N",
  showgroupinfo = "X",
  shownoanswer = "N",
  showqnumcode = "X",
  bounceprocessing = "N",
  showwelcome = "N",
  showprogress = "N",
  questionindex = "0",
  navigationdelay = "0",
  nokeyboard = "N",
  alloweditaftercompletion = "N",
  googleanalyticsstyle = 0,
  googleanalyticsapikey = "",
  new_id_fun = NULL
)
```

Arguments:

`titles` The titles of the survey in the primary language and optionally any addiitonal languages.

`descriptions` The descriptions of the survey in the primary language and any additional languages

`welcomeTexts` The welcome texts of the survey in the primary language and any additional languages

`endTexts` The end texts of the survey in the primary language and any additional languages

`endURLs` The end URLs of the survey in the primary language and any additional languages

`endURLdescriptions` The end URL descriptions of the survey in the primary language and any additional languages

`dateformats` The date formats to use in the primary language and any additional languages; the index of the option from the dropdown in LimeSurvey (6 is the ISO standard, "YYYY-MM-DD").

`numberformats` The number formats to use in the primary language and any additional languages (for periods as decimal marks, `0`; for commas as decimal marks, `1`).

`sid` The unique survey identifier; if this is free when importing the survey, this will be used.

`gsid` The Survey Group identifier.

`admin` The name of the survey administrator

`adminemail` The email address of the survey administrator

`anonymized` Whether the survey uses anonymized responses (`Y` or `N`).

`faxto` The contents of the "Fax to" field

`format` How to present the survey (`Q` for question by question; `G` for group by group; and `A` for all in one).

`savetimings` Whether to save timings of responses (`Y` or `N`).

`template` The name of the LimeSurvey theme to use.

`language` The primary language of the survey.

`additional_languages` Any additional languages the survey uses.

`datestamp` Whether to datestamp responses (`Y` or `N`).

`usecookie` Whether to use cookies to enable answer persistence.

`allowregister` Whether to allow public registration (`Y` or `N`).

`allowsave` Whether to allow users to save their responses and returning later (`Y` or `N`).

`autonumber_start` Where to start autonumbering

`autoredirect` Whether to automatically redirect users to a URL (`Y` or `N`).

`allowprev` Whether to allow users to return to previous pages (`Y` or `N`).

`printanswers` Whether to allow printing of answer (`Y` or `N`).

`ipaddr` Whether to store IP addresses (`Y` or `N`).

`refurl` Whether to store the referring URL (`Y` or `N`).

`showsurveypolicynotice` Whether to show the data policy notice (`Y` or `N`).

`publicstatistics` Whether to have public statistics (`Y` or `N`).

`publicgraphs` Whether to show graphs in public statistics (`Y` or `N`).

`listpublic` Whether to list the survey publicly (`Y` or `N`).

`htmlemail` Whether to use HTML format for token emails (`Y` or `N`).

`sendconfirmation` Whether to send confirmation emails (`Y` or `N`).

`tokenanswerspersistence` Whether to use token-based response persistence (`Y` or `N`).

`assessments` Whether to use assessments (`Y` or `N`).

`usecaptcha` Whether to use CAPTCHA's (`Y` or `N`).

`usetokens` Whether to use tokens (`Y` or `N`).

`bounce_email` Where bouncing emails should be sent.

`emailresponseto` Where detailed admin notifications emails should be sent.

`emailnotificationto` Where a notification should be sent for new responses.

`tokenlength` The token length.

`showxquestions` Whether to show "There are X questions in this survey" (`Y` or `N`).

`showgroupinfo` Whether to show group name and info (`Y`, `N`, or `X` to show nothing).

`shownoanswer` Whether to show the "No answer" option (`Y` or `N`).

`showqnumcode` Whether to show answer codes or numbers (`Y`, `N`, or `X` to show nothing).

`bounceprocessing` Whether to process bouncing emails? (`Y` or `N`).

`showwelcome` Whether to show the welcome page (`Y` or `N`).

`showprogress` Whether to show the progress bar (`Y` or `N`).

`questionindex` Whether to show the question index (`0` to disable; can also be set to incremental or full (`1` and `2`?)).

`navigationdelay` The navigation delay in seconds

`nokeyboard` Whether to show the on-screen keyboard (`Y` or `N`).

`alloweditaftercompletion` Whether to allow multiple reponses (`N`) or to allow updating responses with one token (`Y`)?

`googleanalyticsstyle` The google analytics settings; `0` for None, other values for other settings.

`googleanalyticsapikey` The google analytics API key.

`new_id_fun` A function to set identifiers (for XML exports, which mirrors MySQL tables and so needs identifiers). By default, new question objects receive this function from the group containing them; and groups receive it from the survey containing them. This ensures that identifiers are always unique in a survey (despite question objects not being able to 'see' anything in the group containing them, and group objects not being able to 'see' anything in the survey containing them; because they 'received' this function from the parent object, and it 'bubbles down' through groups to the questions, those functions still get and set a private identifier property in the 'top-most' object).

Returns: A new `Survey` object.

Method `add_group()`**:** Add a group to a survey object.

Usage:

```
Survey$add_group(titles, descriptions = "", relevance = 1, random_group = "")
```

Arguments:

`titles` The group's title, either as a named character vector where each element is the group title in a different language, and every element's name is the language code; or as a single character value, in which case the survey's primary language is used.

`descriptions` The group description, either as a named character vector where each element is the group description in a different language, and every element's name is the language code; or as a single character value, in which case the survey's primary language is used.

`relevance` The group's relevance equation.

`random_group` The group's randomization group.

Returns: Invisibly, the `Survey` object.

Method `add_question()`**:** Add a question to a survey object.

Usage:

```
Survey$add_question(groupId, code, type = NULL, lsType = NULL, ...)
```

Arguments:

`groupId` The id of the group to add the question to.

`code` The question code.

`type` The question type.

`lsType` The question type, as LimeSurvey question type.

`...` Additional arguments are used to create the Question using `Question$new`.

Returns: Invisibly, the `Survey` object.

Method `export_to_tsv()`**:** Export the survey as a tab separated values file (see https://manual.limesurvey.org/Tab_Separa

Usage:

```
Survey$export_to_tsv(
  file,
  preventOverwriting = limonaid::opts$get("preventOverwriting"),
  parallel = TRUE,
  encoding = limonaid::opts$get("encoding"),
  silent = limonaid::opts$get("silent"),
  backupLanguage = self$language
)
```

Arguments:

`file` The filename to which to save the file.

`preventOverwriting` Whether to prevent overwriting.

`parallel` Whether to work serially or in parallel.

`encoding` The encoding to use

`silent` Whether to be silent or chatty.

`backupLanguage` The language to get content from if not from the primary langage.

Returns: Invisibly, the `Survey` object.

Method `find_group_id()`**:** Find the numeric group identifier by group title.

Usage:

```
Survey$find_group_id(title, titleLanguage = NULL)
```

Arguments:

`title` The survey title.

`titleLanguage` The language in which to search.

Returns: Invisibly, the `Survey` object.

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
Survey$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

`transpose_df` *Transpose a data frame*

Description

Returns a list of lists, where each list contains a row.

Usage

```
transpose_df(x)
```

Arguments

`x`	The data frame.

Value

A list.

Examples

```
limonaid::transpose_df(
  mtcars[1:3, 1:3]
);
```

vecTxt *Easily parse a vector into a character value*

Description

Easily parse a vector into a character value

Usage

```
vecTxt(
  vector,
  delimiter = ", ",
  useQuote = "",
  firstDelimiter = NULL,
  lastDelimiter = " & ",
  firstElements = 0,
  lastElements = 1,
  lastHasPrecedence = TRUE
)

vecTxtQ(vector, useQuote = "'", ...)
```

Arguments

vector	The vector to process.
delimiter, firstDelimiter, lastDelimiter	The delimiters to use for respectively the middle, first firstElements, and last lastElements elements.
useQuote	This character string is pre- and appended to all elements; so use this to quote all elements (useQuote="'"), doublequote all elements (useQuote='"'), or anything else (e.g. useQuote='|'). The only difference between vecTxt and vecTxtQ is that the latter by default quotes the elements.
firstElements, lastElements	The number of elements for which to use the first respective last delimiters
lastHasPrecedence	If the vector is very short, it's possible that the sum of firstElements and lastElements is larger than the vector length. In that case, downwardly adjust the number of elements to separate with the first delimiter (TRUE) or the number of elements to separate with the last delimiter (FALSE)?
...	Any addition arguments to vecTxtQ are passed on to vecTxt.

Value

A character vector of length 1.

Examples

```
vecTxtQ(names(mtcars));
```

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