Package 'wizaRdry'

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Title A Magical Framework for Collaborative & Reproducible Data
Analysis

Version 0.6.6

Description A comprehensive data analysis framework for NIH-funded research that stream-
lines workflows for both data cleaning and preparing NIH Data Archive ('NDA') submission tem-
plates. Provides unified access to multiple data sources ('REDCap', 'Mon-
goDB', 'Qualtrics', 'SQL', 'ORACLE') through interfaces to their APIs, with specialized func-
tions for data cleaning, filtering, merging, and parsing. Features automatic validation, field har-
monization, and memory-aware processing to enhance reproducibility in multi-site collabora-
tive research as described in Mittal et al. (2021) <doi:10.20900/jpbs.20210011>.

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BugReports https://github.com/belieflab/wizaRdry/issues

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Contents

| clean | *Generate clean data frames from cleaning scripts created in the ./clean directory* |

Description

This function processes requests for clean data sequentially for specified measures. It makes a request to the appropriate API for the named measure or measures and runs the associated data cleaning routines. It then runs a series of unit tests to verify that the data quality standards are met.

Usage

```
clean(..., csv = FALSE, rdata = FALSE, spss = FALSE, skip_prompt = TRUE)
```

Arguments

`...`	Strings, specifying the measures to process, which can be a Mongo collection, REDCap instrument, or Qualtrics survey.
`csv`	Optional; Boolean, if TRUE creates a .csv extract in ./tmp.
`rdata`	Optional; Boolean, if TRUE creates an .rdata extract in ./tmp.
`spss`	Optional; Boolean, if TRUE creates a .sav extract in ./tmp.
`skip_prompt`	Logical. If TRUE (default), skips confirmation prompts. If FALSE, prompts for confirmation unless the user has previously chosen to remember their preference.

Value

Prints the time taken for the data request process.

Author(s)

Joshua Kenney joshua.kenney@yale.edu

Examples

```
## Not run:
  clean("prl", csv=TRUE)
  clean("rgpts", "kamin", rdata=TRUE)

  # Skip confirmation prompts
  clean("prl", csv=TRUE, skip_prompt=TRUE)

## End(Not run)
```

---

createCsv   *Alias for 'to.csv' (DEPRECATED)*

Description

This function is deprecated. Please use 'to.csv' instead. This is a legacy alias for the 'to.csv' function to maintain compatibility with older code.

Usage

```
createCsv(...)
```

Arguments

`...`	Additional arguments passed through to `to.csv()`.

Value

Invisible TRUE if successful. The function writes a CSV file to the specified path and prints a message indicating the file's location.

Examples

```
## Not run:
# DEPRECATED - use to.csv() instead
createCsv(prl01)

## End(Not run)
```

---

createRds   *Alias for 'to.rds' (DEPRECATED)*

Description

This function is deprecated. Please use 'to.rds' instead. This is a legacy alias for the 'to.rds' function to maintain compatibility with older code.

Usage

```
createRds(...)
```

Arguments

`...`	Additional arguments passed through to `to.rds()`.

Value

Invisible TRUE if successful. The function writes an RDS file to the specified path and prints a message indicating the file's location.

Examples

```
## Not run:
# DEPRECATED - use to.rds() instead
createRds(prl01)

## End(Not run)
```

---

createSpss   *Alias for 'to.sav' (DEPRECATED)*

Description

This function is deprecated. Please use 'to.sav' instead. This is a legacy alias for the 'to.sav' function to maintain compatibility with older code.

Usage

```
createSpss(...)
```

Arguments

... Additional arguments passed through to `to.sav()`.

Value

Invisible TRUE if successful. Writes an SPSS file to the designated path and prints a message indicating the file's location.

Examples

```
## Not run:
# DEPRECATED - use to.sav() instead
createSpss(prl01)

## End(Not run)
```

---

dataFilter   *Alias for 'sift' (DEPRECATED)*

Description

This function is deprecated. Please use 'sift' instead. This is a legacy alias for the 'sift' function to maintain compatibility with older code.

Usage

```
dataFilter(...)
```

Arguments

```
...                     Additional arguments passed through to sift().
```

Value

A filtered dataframe based on the provided parameters, and containing only the columns specified in 'cols'. If no columns are specified, returns the entire dataframe with applied row filters.

Examples

```
## Not run:
# DEPRECATED - use sift() instead
filtered <- dataFilter(df, sex="F")

## End(Not run)
```

---

dataMerge   *Alias for 'meld' (DEPRECATED)*

Description

This function is deprecated. Please use 'meld' instead. This is a legacy alias for the 'meld' function to maintain compatibility with older code.

Usage

```
dataMerge(...)
```

Arguments

```
...                     Clean data frames to be merged.
```

Value

A merged data frame based on the specified or common candidate keys.

Examples

```
## Not run:
# DEPRECATED - use meld() instead
merged <- dataMerge(df1_clean, df2_clean)

## End(Not run)
```

---

dataRequest *Alias for 'clean' (DEPRECATED)*

Description

This function is deprecated. Please use 'clean' instead. This is a legacy alias for the 'clean' function to maintain compatibility with older code.

Usage

```
dataRequest(...)
```

Arguments

...   Strings, specifying the measures to process, which can be a Mongo collection, REDCap instrument, or Qualtrics survey.

Value

Prints the time taken for the data request process.

Examples

```
## Not run:
# DEPRECATED - use clean() instead
prl <- dataRequest("prl")

## End(Not run)
```

---

getRedcap *Alias for 'redcap' (DEPRECATED)*

Description

This function is deprecated. Please use 'redcap' instead. This is a legacy alias for the 'redcap' function to maintain compatibility with older code.

Usage

```
getRedcap(...)
```

Arguments

`...`	Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned. This is useful for filtering data to only include complete cases for specific variables of interest.

Value

A data frame containing the requested REDCap data

Examples

```
## Not run:
# DEPRECATED - use redcap() instead
survey_data <- getRedcap("demographics")

## End(Not run)
```

---

getSurvey *Alias for 'qualtrics' (DEPRECATED)*

Description

This function is deprecated. Please use 'qualtrics' instead. This is a legacy alias for the 'qualtrics' function to maintain compatibility with older code.

Usage

```
getSurvey(...)
```

Arguments

`...`	Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned. This is useful for filtering data to only include complete cases for specific variables of interest.

Value

A cleaned and harmonized data frame containing the survey data with superkeys first.

Examples

```
## Not run:
# DEPRECATED - use qualtrics() instead
survey_data <- getSurvey("your_survey_alias")

## End(Not run)
```

---

getTask   *Alias for 'mongo' (DEPRECATED)*

Description

This function is deprecated. Please use 'mongo' instead. This is a legacy alias for the 'mongo' function to maintain compatibility with older code.

Usage

```
getTask(...)
```

Arguments

...	Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned. This is useful for filtering data to only include complete cases for specific variables of interest.

Value

A data frame containing the MongoDB data with superkeys first

Examples

```
## Not run:
# DEPRECATED - use mongo() instead
survey_data <- getTask("task_alias")

## End(Not run)
```

---

meld	*Merge two or more data frames magically according to their candidate key*

Description

This function simplifies the process of merging multiple cleaned data frames by automatically determining common merge keys or utilizing user-specified keys. Supports both inner and outer join methods, and offers options for exporting the merged data.

Usage

```
meld(
  ...,
  by = NULL,
  all = TRUE,
  no.dups = FALSE,
  csv = FALSE,
  rdata = FALSE,
  spss = FALSE
)
```

Arguments

`...`	Clean data frames to be merged.
`by`	A vector of strings specifying the column names to be used as merge keys. If NULL, the function automatically determines common keys from the provided data frames.
`all`	Logical; if TRUE, performs an OUTER JOIN. If FALSE, performs an INNER JOIN.
`no.dups`	Logical; if TRUE, duplicates are removed post-merge.
`csv`	Logical; if TRUE, the merged data frame is exported as a CSV file.
`rdata`	Logical; if TRUE, the merged data frame is saved as an Rda file.
`spss`	Logical; if TRUE, the merged data frame is exported as an SPSS file.

Value

A merged data frame based on the specified or common candidate keys.

Author(s)

Joshua Kenney joshua.kenney@yale.edu

Examples

```
## Not run:
# Create sample dataframes for demonstration
df1 <- data.frame(
  src_subject_id = c("S001", "S002", "S003"),
  visit = c(1, 2, 1),
  measure1 = c(10, 15, 12),
  stringsAsFactors = FALSE
)

df2 <- data.frame(
  src_subject_id = c("S001", "S002", "S004"),
  visit = c(1, 2, 2),
  measure2 = c(85, 92, 78),
  stringsAsFactors = FALSE
)

# Perform an OUTER JOIN using default keys:
merged1 <- meld(df1, df2, all = TRUE)

# Perform an INNER JOIN using specified keys:
merged2 <- meld(df1, df2, by = "src_subject_id", all = FALSE)

## End(Not run)
```

---

mongo	*Fetch data from MongoDB to be stored in a data frame - UPDATED VERSION*

Description

Fetch data from MongoDB to be stored in a data frame - UPDATED VERSION

Usage

```
mongo(
  collection,
  ...,
  database = NULL,
  identifier = NULL,
  chunk_size = NULL,
  verbose = FALSE,
  interview_date = NULL
)
```

Arguments

collection   The name of the MongoDB collection

...	Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned. This is useful for filtering data to only include complete cases for specific variables of interest.
database	The database name (optional)
identifier	Field to use as identifier (optional)
chunk_size	Number of records per chunk (optional)
verbose	Logical; if TRUE, displays detailed progress messages. Default is FALSE.
interview_date	Optional; can be either: - A date string in various formats (ISO, US, etc.) to filter data up to that date - A boolean TRUE to return only rows with non-NA interview_date values

Value

A data frame containing the MongoDB data with superkeys first

Examples

```
## Not run:
# Get data from MongoDB collection
data <- mongo("collection")

## End(Not run)
```

---

mongo.index   *Display table of available MongoDB collections*

Description

Retrieves a list of all available collections in the configured MongoDB database.

Usage

```
mongo.index(database = NULL)
```

Arguments

database	Optional; the name of the database to connect to. If NULL, uses the database specified in the configuration file.

Value

A character vector containing the names of all available collections in the configured MongoDB database.

| mongo.rune | *Parse composite MongoDB collection into component data frames by variable prefix* |

Description

This function fetches a MongoDB collection containing multiple collections and separates it into individual data frames for each collection detected in the data. It identifies the appropriate identifier column (e.g., participantId, workerId) and splits the data based on column name prefixes.

Usage

```
mongo.rune(collection, prefix = NULL, db_name = NULL, lower = TRUE)
```

Arguments

collection	Character string specifying the Mongo collection
prefix	Character string; default NULL, if specified returns only the dataframe with this prefix
db_name	Character string specifying the Mongo database
lower	default TRUE convert prefixes to lower case

Details

The function performs the following steps:

- Retrieves the raw Qualtrics data using the getSurvey() function
- Identifies which identifier column to use (participantId, workerId, PROLIFIC_PID, or src_subject_id)
- Determines survey prefixes by analyzing column names
- Creates separate dataframes for each survey prefix found
- Assigns each dataframe to the global environment with names matching the survey prefixes

Value

If prefix is specified, returns a single dataframe with that prefix. Otherwise, creates multiple dataframes in the global environment, one for each survey detected in the data. Each dataframe is named after its survey prefix.

Examples

```
## Not run:
# Parse a MongoDB collection into its component dataframes
mongo.rune("combined_surveys")

# After running, access individual survey dataframes directly:
head(pss)  # Access the PSS survey dataframe
```

```
head(cesd) # Access the CESD survey dataframe

# Parse a single survey from composite collection
rgpts <- mongo.rune("combined_surveys", prefix = "rgpts")

## End(Not run)
```

---

nda   *Generate validated NDA submission templates created in the ./nda di-*
                             rectory

Description

This function processes requests for clean data sequentially for specified measures. It makes a
request to the NIH NDA API for the named data structures and runs the associated data remediation
routines. It then runs a series of unit tests to verify that the data quality standards are met.

Usage

```
nda(
  ...,
  csv = FALSE,
  rdata = FALSE,
  spss = FALSE,
  limited_dataset = FALSE,
  skip_prompt = TRUE,
  verbose = FALSE,
  strict = TRUE,
  dcc = FALSE
)
```

Arguments

...	Strings, specifying the measures to process, which can be a Mongo collection, REDCap instrument, or Qualtrics survey.
csv	Optional; Boolean, if TRUE creates a .csv extract in ./tmp.
rdata	Optional; Boolean, if TRUE creates an .rdata extract in ./tmp.
spss	Optional; Boolean, if TRUE creates a .sav extract in ./tmp.
limited_dataset	
	Optional; Boolean, if TRUE does not perform date-shifting of interview_date or age-capping of interview_age
skip_prompt	Logical. If TRUE (default), skips confirmation prompts unless preferences aren't set yet. If FALSE, prompts for confirmation unless the user has previously chosen to remember their preference.

verbose	Logical. If TRUE, shows detailed processing information. If FALSE (default), shows only essential user-facing messages.
strict	Logical. If TRUE (default), enforce strict NDA validation: required fields with ANY missing data or recommended fields with ALL missing data will cause validation failure. If FALSE (lenient mode), missing data triggers warnings but allows processing to continue.
dcc	Logical. If TRUE, include 11 DCC (Data Coordinating Center) fields from ndar_subject01 (7 required + 4 recommended). Default FALSE.

Value

Prints the time taken for the data request process.

Author(s)

Joshua Kenney joshua.kenney@yale.edu

Examples

```
## Not run:
  nda("prl", csv=TRUE)
  nda("rgpts", "kamin", rdata=TRUE)

  # Skip confirmation prompts
  nda("prl", csv=TRUE, skip_prompt=TRUE)

  # Show detailed processing information
  nda("prl", verbose=TRUE)

  # Use lenient validation mode (allow missing data with warnings)
  nda("prl", strict=FALSE)

  # Include DCC fields from ndar_subject01
  nda("prl", dcc=TRUE)

## End(Not run)
```

---

ndaRequest	*Alias for 'nda' (DEPRECATED)*

Description

This function is deprecated. Please use 'nda' instead. This is a legacy alias for the 'nda' function to maintain compatibility with older code.

Usage

```
ndaRequest(...)
```

Arguments

    ...   Strings, specifying the measures to process, which can be a Mongo collection, REDCap instrument, or Qualtrics survey.

Value

Prints the time taken for the data request process.

Examples

```
## Not run:
# DEPRECATED - use nda() instead
prl01 <- ndaRequest("prl01")

## End(Not run)
```

---

oracle   *Fetch data from Oracle database to be stored in a data frame*

Description

Retrieves data from an Oracle table or view and optionally joins it with a primary keys table as specified in the configuration.

Usage

```
oracle(
  table_name = NULL,
  ...,
  fields = NULL,
  where_clause = NULL,
  join_primary_keys = TRUE,
  custom_query = NULL,
  max_rows = NULL,
  date_format = NULL,
  batch_size = 1000,
  pii = FALSE,
  interview_date = NULL,
  all = FALSE,
  schema = NULL
)
```

Arguments

table_name	Name of the SQL table or view to query
...	Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned.

fields	Optional vector of specific fields to select
where_clause	Optional WHERE clause to filter results (without the "WHERE" keyword)
join_primary_keys	
	Boolean, whether to join with the primary keys table (default: TRUE)
custom_query	Optional custom SQL query to execute instead of building one
max_rows	Optional limit on the number of rows to return
date_format	Optional format for date fields (default uses ISO format)
batch_size	Number of records to retrieve per batch for large datasets
pii	Logical; if FALSE (default), remove fields marked as PII. TRUE keeps PII.
interview_date	Optional; can be either: - A date string in various formats (ISO, US, etc.) to filter data up to that date - A boolean TRUE to return only rows with non-NA interview_date values
all	Logical; if TRUE, use LEFT OUTER JOIN instead of INNER JOIN (default: FALSE), similar to the 'all' parameter in base R's merge() function
schema	Optional schema name to use for table qualification

Value

A data frame containing the requested SQL data

Examples

```
## Not run:
# Get data from a specific table
data <- oracle("participants")

# Get data with a where clause
survey_data <- oracle("vw_surveyquestionresults",
                  where_clause = "resultidentifier = 'NRS'")

# Get all records, including those without matching primary key
all_data <- oracle("candidate", all = TRUE)

# Specify schema explicitly
schema_data <- oracle("survey_results", schema = "STUDY_DATA")

## End(Not run)
```

---

oracle.desc	*Get Oracle table columns/metadata*

Description

Get Oracle table columns/metadata

Usage

```
oracle.desc(table_name, schema = NULL)
```

Arguments

`table_name`	Name of the table to get metadata for
`schema`	Optional schema name

Value

A data frame with column information

`oracle.index`   *Get a list of tables from the Oracle database*

Description

Get a list of tables from the Oracle database

Usage

```
oracle.index(schema = NULL)
```

Arguments

`schema`	Optional schema name to filter tables

Value

A data frame with table information

`oracle.query`   *Perform a direct Oracle query with minimal processing*

Description

Perform a direct Oracle query with minimal processing

Usage

```
oracle.query(query, pii = FALSE, schema = NULL)
```

Arguments

query	The SQL query to execute
pii	Logical; if FALSE (default), remove fields marked as PII. TRUE keeps PII.
schema	Optional schema name to qualify table names in the query

Value

A data frame with the query results

---

oracle.test	*Test Oracle database connection*

Description

Tests the connection to the Oracle database using the configured DSN and credentials. This is a simple connectivity test that doesn't perform any data operations.

Usage

```
oracle.test()
```

Value

A logical value indicating whether the connection was successful

Examples

```
## Not run:
# Test the Oracle connection
if (oracle.test()) {
  message("Oracle connection successful!")
} else {
  message("Oracle connection failed!")
}

## End(Not run)
```

qualtrics   *Retrieve Survey Data from Qualtrics*

Description

Retrieve Survey Data from Qualtrics

Usage

```
qualtrics(
  qualtrics_alias,
  ...,
  institution = NULL,
  label = FALSE,
  interview_date = NULL,
  complete = FALSE
)
```

Arguments

qualtrics_alias

> The alias for the Qualtrics survey to be retrieved.

`...`	Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned. This is useful for filtering data to only include complete cases for specific variables of interest.
`institution`	Optional. The institution name (e.g., "temple" or "nu"). If NULL, all institutions will be searched.
`label`	Logical indicating whether to return coded values or their associated labels (default is FALSE).
`interview_date`	Optional; can be either: - A date string in various formats (ISO, US, etc.) to filter data up to that date - A boolean TRUE to return only rows with non-NA interview_date values
`complete`	Logical; default FALSE, if TRUE only returns rows where Progress == 100

Value

A cleaned and harmonized data frame containing the survey data with superkeys first.

Examples

```
## Not run:
# Get survey by alias (will search all institutions)
survey_data <- qualtrics("rgpts")

## End(Not run)
```

---

qualtrics.dict *Fetch Qualtrics survey metadata to be stored in data frame*

Description

This function extracts column mappings from the metadata of a Qualtrics survey data frame. It can accept either a data frame containing Qualtrics data, a variable name as string, or a survey alias string.

Usage

```
qualtrics.dict(survey_alias, exclude_embedded = TRUE)
```

Arguments

survey_alias   Can either be an existing dataframe, variable name as string, or survey alias string

exclude_embedded

         Only select QIDs

Value

A list containing the mappings of column names to survey questions.

---

qualtrics.index *Display table of available Qualtrics surveys*

Description

Retrieves a list of all available surveys from the Qualtrics API. Shows all surveys pulled down from Qualtrics, with alias and institution information merged from config.yml where available.

Usage

```
qualtrics.index(institution = NULL, all = FALSE)
```

Arguments

institution   Optional; the institution identifier to use. If NULL, uses all institutions specified in the configuration file (or all available credentials if no config).

all   Logical; deprecated parameter kept for backward compatibility. All surveys are now shown by default. Default is FALSE.

Value

A data frame containing the IDs and names of all available surveys from the Qualtrics API. Surveys with aliases configured in config.yml will show the alias and institution; unmapped surveys will show NA for these fields.

---

qualtrics.rune	*Parse composite Qualtrics survey into component data frames by variable prefix*

Description

This function fetches a Qualtrics data frame containing multiple surveys and separates it into individual data frames for each survey detected in the data. It identifies the appropriate identifier column (e.g., participantId, workerId) and splits the data based on column name prefixes.

Usage

```
qualtrics.rune(
  qualtrics_alias,
  prefix = NULL,
  institution = NULL,
  label = FALSE,
  interview_date = NULL,
  complete = FALSE,
  lower = TRUE
)
```

Arguments

`qualtrics_alias`	
	Character string specifying the Qualtrics survey alias to retrieve.
`prefix`	Character string; default NULL, if specified returns only the dataframe with this prefix
`institution`	Character string; default NULL, specify location
`label`	Logical; default TRUE, returns coded values as labels instead of raw values.
`interview_date`	Logical or Date String, returns all data before date
`complete`	Logical; default FALSE, if TRUE only returns rows where Progress == 100
`lower`	default TRUE convert prefixes to lower case

Details

The function performs the following steps:

- Retrieves the raw Qualtrics data using the getSurvey() function
- Identifies which identifier column to use (participantId, workerId, PROLIFIC_PID, or src_subject_id)
- Determines survey prefixes by analyzing column names
- Creates separate dataframes for each survey prefix found
- Assigns each dataframe to the global environment with names matching the survey prefixes

Value

Creates multiple dataframes in the global environment, one for each survey detected in the data. Each dataframe is named after its survey prefix.

Examples

```
## Not run:
# Parse a a Qualtrics survey into its component dataframes
qualtrics.rune("combined_surveys", label = FALSE)

# After running, access individual survey dataframes directly:
head(pss)  # Access the PSS survey dataframe
head(cesd) # Access the CESD survey dataframe

# Parse a single Qualtrics survey from composite survey
rgpts <- qualtrics.rune("combined_surveys", prefix = "rgpts")

## End(Not run)
```

---

redcap   *Fetch data from REDCap to be stored in a data frame*

Description

Retrieves data from a REDCap instrument and ensures subject identifiers are propagated across all events

Usage

```
redcap(
  instrument_name = NULL,
  ...,
  raw_or_label = "raw",
  redcap_event_name = NULL,
  batch_size = 1000,
  records = NULL,
  fields = NULL,
  pii = FALSE,
  interview_date = NULL,
  date_format = "ymd",
  complete = NULL
)
```

Arguments

`instrument_name`
> Name of the REDCap instrument

`...`
> Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned. This is useful for filtering data to only include complete cases for specific variables of interest.

`raw_or_label`   Whether to return raw or labeled values

`redcap_event_name`
> Optional event name filter. Can be a single string or a vector of event names (e.g., c("event1", "event2"))

`batch_size`   Number of records to retrieve per batch

`records`   Optional vector of specific record IDs

`fields`   Optional vector of specific fields

`pii`   Logical; if FALSE (default), remove fields marked as PII. TRUE keeps PII.

`interview_date`   Optional; can be either: - A date string in various formats (ISO, US, etc.) to filter data up to that date - A boolean TRUE to return only rows with non-NA interview_date values

`date_format`   Default ymd define date format for interview_date

`complete`   Option boolean TRUE will return only forms marked as complete in REDCap

Value

A data frame containing the requested REDCap data

Examples

```
## Not run:
# Get data from a specific instrument
data <- redcap("demographics")

## End(Not run)
```

---

redcap.dict   *Fetch REDCap data dictionary to be stored in data frame*

Description

This function extracts metadata/dictionary information from REDCap. It can accept either an instrument name to fetch new data, an existing data frame with instrument attributes, or a variable name as string.

Usage

```
redcap.dict(instrument_name)
```

Arguments

instrument_name

> Can either be an instrument name to fetch new data, a data frame returned by redcap(), or a variable name as string

Value

A data frame containing the data dictionary/metadata for the specified instrument

---

redcap.index	*Display table of available REDCap instruments and their labels*

Description

Retrieves a list of all available REDCap forms as a formatted table

Usage

```
redcap.index()
```

Value

A formatted table (kable) of available REDCap instruments/forms

---

redcap.rune	*Parse composite REDCap instrument into component data frames by variable prefix*

Description

This function fetches a REDCap instrument and separates it into individual data frames for each survey/collection detected in the data based on column name prefixes. It identifies the appropriate identifier column and splits the data accordingly.

Usage

```
redcap.rune(
  instrument_name,
  prefix = NULL,
  raw_or_label = "raw",
  redcap_event_name = NULL,
  batch_size = 1000,
  records = NULL,
  fields = NULL,
  pii = FALSE,
```

```
    interview_date = NULL,
    date_format = "ymd",
    lower = TRUE
)
```

Arguments

instrument_name

        Name of the REDCap instrument

prefix   Character string; default NULL, if specified returns only the dataframe with this prefix

raw_or_label   Whether to return raw or labeled values

redcap_event_name

        Optional event name filter. Can be a single string or a vector of event names (e.g., c("event1", "event2"))

batch_size   Number of records to retrieve per batch

records   Optional vector of specific record IDs

fields   Optional vector of specific fields

pii   Logical; if FALSE (default), remove fields marked as PII. TRUE keeps PII.

interview_date   Optional; date filtering parameter

date_format   Default ymd define date format for interview_date

lower   default TRUE convert prefixes to lower case

Value

If prefix is specified, returns a single dataframe with that prefix. Otherwise, creates multiple dataframes in the parent environment, one for each survey detected in the data. Each dataframe is named after its survey prefix.

Examples

```
## Not run:
# Parse a REDCap instrument into its component dataframes
redcap.rune("baseline_assessment")

# After running, access individual survey dataframes directly:
head(pss)  # Access the PSS survey dataframe
head(cesd) # Access the CESD survey dataframe

# Parse a single survey from composite instrument
rgpts <- redcap.rune("baseline_assessment", prefix = "rgpts")

## End(Not run)
```

<hr>

rune	*Parse composite data frame into component data frames by variable prefix*

<hr>

Description

This function takes a data frame containing multiple measures and separates it into individual data frames for each measure detected in the data. It identifies the appropriate identifier column (e.g., participantId, workerId) and splits the data based on column name prefixes.

Usage

```
rune(df, prefix = NULL, lower = TRUE)
```

Arguments

df	a dataframe containing multiple, prefixed measures
prefix	Character string; default NULL, if specified returns only the dataframe with this prefix
lower	default TRUE convert prefixes to lower case

Details

The function performs the following steps:

- Identifies which identifier column to use (participantId, workerId, PROLIFIC_PID, or src_subject_id)
- Determines survey prefixes by analyzing column names
- Creates separate dataframes for each survey prefix found
- Assigns each dataframe to the global environment with names matching the survey prefixes

Value

If prefix is specified, returns a single dataframe with that prefix. Otherwise, creates multiple dataframes in the global environment, one for each survey detected in the data. Each dataframe is named after its survey prefix.

Examples

```
# Parse a data frame containing multiple surveys
combined_df <- data.frame(
  record_id = c("REC001", "REC002", "REC003", "REC004"),
  src_subject_id = c("SUB001", "SUB002", "SUB003", "SUB004"),
  subjectkey = c("KEY001", "KEY002", "KEY003", "KEY004"),
  site = c("Yale", "NU", "Yale", "NU"),
  phenotype = c("A", "B", "A", "C"),
  visit = c(1, 2, 2, 1),
  state = c("complete", "completed baseline", "in progress", NA),
```

```
    status = c(NA, NA, NA, "complete"),
    lost_to_followup = c(FALSE, FALSE, TRUE, NA),
    interview_date = c("2023-01-15", "2023/02/20", NA, "2023-03-10"),
    foo_1 = c(1, 3, 5, 7),
    foo_2 = c("a", "b", "c", "d"),
    bar_1 = c(2, 4, 6, 8),
    bar_2 = c("w", "x", "y", "z")
)
rune(combined_df)

# After running, access individual survey dataframes directly:
head(foo)  # Access the foo dataframe
head(bar)  # Access the bar dataframe

# Parse a single survey from composite dataframe
foo_df <- rune(combined_df, prefix = "foo")
```

---

scry   *Initialize the wizaRdry directory structure inside an R project*

Description

Creates the standard directory structure required for the wizaRdry package to function properly.
This includes folders for data cleaning scripts, NDA submission templates, and temporary outputs.
It can detect and repair incomplete directory structures, and optionally create an R project.

Usage

```
scry(
  study_alias = NULL,
  path = ".",
  overwrite = FALSE,
  repair = FALSE,
  show_tree = NULL,
  create_project = FALSE,
  examples = FALSE,
  skip_prompt = TRUE
)
```

Arguments

`study_alias`	Character string specifying the short name for the study e.g. impact, capr, sing
`path`	Character string specifying the directory path where the structure should be created. Defaults to the current working directory.
`overwrite`	Logical. If TRUE, will overwrite existing files. If FALSE (default), will not replace existing files.

repair	Logical. If TRUE, will attempt to repair an incomplete directory structure. If FALSE, will abort with an error message when encountering an incomplete structure.
show_tree	Logical. If TRUE (default on first run), will display a visual file tree. Set to FALSE to suppress the tree view.
create_project	Logical. If TRUE, will create an R project file if one doesn't exist. If FALSE (default), will not create an R project.
examples	Logical. If TRUE (default when not repairing), will create example script templates. If FALSE (default when repairing), will skip creating example scripts.
skip_prompt	Logical. If TRUE (default), will skip the initial confirmation prompt if y/n preferences are not set yet. FALSE if specified.

Details

The function creates the following directory structure:

- clean/
    - csv/
    - mongo/
    - qualtrics/
    - redcap/
    - oracle/
    - sql/
- nda/
    - csv/
    - mongo/
    - qualtrics/
    - redcap/
    - oracle/
    - sql/
- tmp/

It also creates template config.yml and secrets.R files, and optionally an R project file.

Value

Invisible TRUE if successful.

Examples

```
## Not run:
# Initialize in current directory
scry()

# Repair structure in current directory
scry(repair = TRUE)
```

```
# Initialize in a specific directory with an R project
scry("path/to/project", create_project = TRUE, repair = TRUE)

# Skip the tree display
scry(repair = TRUE, show_tree = FALSE)

# Explicitly create example scripts when repairing
scry(repair = TRUE, examples = TRUE)

# Skip the confirmation prompt
scry(skip_prompt = TRUE)

## End(Not run)
```

---

sift   *Filter data frame by superkey parameters, rows, and columns*

Description

Filter data frame by superkey parameters, rows, and columns

Usage

```
sift(
  df,
  rows = NULL,
  cols = NULL,
  record_id = NULL,
  src_subject_id = NULL,
  subjectkey = NULL,
  site = NULL,
  subsiteid = NULL,
  sex = NULL,
  race = NULL,
  ethnic_group = NULL,
  phenotype = NULL,
  phenotype_description = NULL,
  status = NULL,
  lost_to_followup = NULL,
  twins_study = NULL,
  sibling_study = NULL,
  family_study = NULL,
  sample_taken = NULL,
  visit = NULL,
  week = NULL,
  arm = NULL,
```

```
    interview_date = NULL
)
```

Arguments

df	Dataframe to be filtered and trimmed based on the provided parameters.
rows	Optional; either a single row name or a vector of row names to be retained in the final output. If NULL or empty, all rows in the dataframe are retained.
cols	Optional; either a single column name or a vector of column names to be retained in the final output. If NULL or empty, all columns in the dataframe are retained.#' Data Filter
record_id	Optional; either a single record_id or a vector of record_ids to filter the dataframe by
src_subject_id	Optional; either a single subject ID or a vector of subject IDs to filter the dataframe by
subjectkey	Optional; either a single subjectkey or a vector of subjectkeys to filter the dataframe by
site	Optional; either a single site value or a vector of site values to filter the dataframe by (e.g., Yale, NU)
subsiteid	Optional; either a single subsiteid or a vector of subsiteids to filter the dataframe by
sex	Optional; either a single sex value or a vector of sex values at birth to filter the dataframe by (e.g., 'M', 'F')
race	Optional; either a single race value or a vector of race values to filter the dataframe by
ethnic_group	Optional; either a single ethnic_group value or a vector of ethnic_group values to filter the dataframe by
phenotype	Optional; either a single phenotype value or a vector of phenotype values to filter the dataframe by
phenotype_description	
	Optional; either a single phenotype_description or a vector of phenotype_descriptions to filter the dataframe by
status	Optional; either a single status string or a vector of status conditions to filter the dataframe by. Used if either 'state' or 'status' column exists in the dataframe. Can include values like 'complete', 'completed baseline', 'completed 12m', 'completed 24m', etc.
lost_to_followup	
	Optional; either a single value or a vector of values to filter the dataframe by (checks both 'lost_to_followup' and 'lost_to_follow-up' columns)
twins_study	Optional; either a single twins_study value or a vector of twins_study values to filter the dataframe by
sibling_study	Optional; either a single sibling_study value or a vector of sibling_study values to filter the dataframe by

family_study	Optional; either a single family_study value or a vector of family_study values to filter the dataframe by
sample_taken	Optional; either a single sample_taken value or a vector of sample_taken values to filter the dataframe by
visit	Optional; either a single visit value or a vector of visit values to filter the dataframe by. Only used if 'visit' column exists in the dataframe.
week	Optional; either a single week value or a vector of week values to filter the dataframe by. Only used if 'week' column exists in the dataframe.
arm	Optional; either a single arm value or a vector of arm values to filter the dataframe by (e.g., drug, placebo)
interview_date	Optional; can be either: - A date string in various formats (ISO, US, etc.) to filter data up to that date - A boolean TRUE to return only rows with non-NA interview_date values

Value

A filtered dataframe based on the provided parameters, and containing only the columns specified in 'cols'. If no columns are specified, returns the entire dataframe with applied row filters.

Examples

```
# Create a sample dataframe
sample_df <- data.frame(
  record_id = c("REC001", "REC002", "REC003", "REC004"),
  src_subject_id = c("SUB001", "SUB002", "SUB003", "SUB004"),
  subjectkey = c("KEY001", "KEY002", "KEY003", "KEY004"),
  site = c("Yale", "NU", "Yale", "NU"),
  phenotype = c("A", "B", "A", "C"),
  visit = c(1, 2, 2, 1),
  state = c("complete", "completed baseline", "in progress", NA),
  status = c(NA, NA, NA, "complete"),
  lost_to_followup = c(FALSE, FALSE, TRUE, NA),
  interview_date = c("2023-01-15", "2023/02/20", NA, "2023-03-10")
)

# Set row names for demonstration
rownames(sample_df) <- c("foo", "bar", "baz", "qux")

# Filter by specific date
filtered1 <- sift(sample_df,
                  cols = c("src_subject_id", "phenotype"),
                  visit = 2,
                  interview_date = "01/31/2023")

# Filter to include only rows with non-NA interview dates
filtered2 <- sift(sample_df,
                  interview_date = TRUE)

# Filter by status (works with either state or status column)
filtered3 <- sift(sample_df,
```

```
                           status = c("complete", "completed baseline"))

    # Filter with specific row names
    filtered4 <- sift(sample_df,
                      rows = c("foo", "qux"))

    # Filter with vector of visit values
    filtered6 <- sift(sample_df,
                      visit = c(1, 2))

    # Filter by lost_to_followup
    filtered10 <- sift(sample_df,
                       lost_to_followup = FALSE)

    # Filter by src_subject_id
    filtered11 <- sift(sample_df,
                       src_subject_id = c("SUB001", "SUB004"))

    # Multiple filters combined
    filtered12 <- sift(sample_df,
                       site = "Yale",
                       visit = 1,
                       cols = c("record_id", "src_subject_id", "site"))
```

---

sql   *Fetch data from SQL database to be stored in a data frame*

Description

Retrieves data from a SQL table and optionally joins it with a primary keys table as specified in the
configuration.

Usage

```
sql(
  table_name = NULL,
  ...,
  fields = NULL,
  where_clause = NULL,
  join_primary_keys = TRUE,
  custom_query = NULL,
  max_rows = NULL,
  date_format = NULL,
  batch_size = 1000,
  pii = FALSE,
  interview_date = NULL,
  all = FALSE
)
```

Arguments

`table_name`	Name of the SQL table or view to query
`...`	Optional column names to filter for. Only rows with non-missing values in ALL specified columns will be returned.
`fields`	Optional vector of specific fields to select
`where_clause`	Optional WHERE clause to filter results (without the "WHERE" keyword)
`join_primary_keys`	
	Boolean, whether to join with the primary keys table (default: TRUE)
`custom_query`	Optional custom SQL query to execute instead of building one
`max_rows`	Optional limit on the number of rows to return
`date_format`	Optional format for date fields (default uses ISO format)
`batch_size`	Number of records to retrieve per batch for large datasets
`pii`	Logical; if FALSE (default), remove fields marked as PII. TRUE keeps PII.
`interview_date`	Optional; can be either: - A date string in various formats (ISO, US, etc.) to filter data up to that date - A boolean TRUE to return only rows with non-NA interview_date values
`all`	Logical; if TRUE, use LEFT OUTER JOIN instead of INNER JOIN (default: FALSE), similar to the 'all' parameter in base R's merge() function

Value

A data frame containing the requested SQL data

Examples

```
## Not run:
# Get data from a specific table
data <- sql("participants")

# Get data with a where clause
survey_data <- sql("vw_surveyquestionresults",
                   where_clause = "resultidentifier = 'NRS'")

# Get all records, including those without matching primary key
all_data <- sql("candidate", all = TRUE)

## End(Not run)
```

---

sql.desc *Get SQL table columns/metadata*

Description

Get SQL table columns/metadata

Usage

```
sql.desc(table_name)
```

Arguments

table_name   Name of the table to get metadata for

Value

A data frame with column information

---

sql.index *Get a list of tables from the SQL database*

Description

Get a list of tables from the SQL database

Usage

```
sql.index(schema = NULL)
```

Arguments

schema   Optional schema name to filter tables

Value

A data frame with table information

---

sql.query *Perform a direct SQL query with minimal processing*

Description

Perform a direct SQL query with minimal processing

Usage

```
sql.query(query, pii = FALSE)
```

Arguments

query	The SQL query to execute
pii	Logical; if FALSE (default), remove fields marked as PII. TRUE keeps PII.

Value

A data frame with the query results

---

to.csv *Create .csv file from a data frame*

Description

This function exports a given R data frame to a CSV file format. The resulting file is saved in the "tmp" directory. If a filename is not specified, the function uses the name of the data frame variable. The ".csv" extension is appended automatically to the filename. The function will prompt for confirmation before creating the file, with an option to remember the user's preference for future calls.

Usage

```
to.csv(df, df_name = NULL, path = ".", skip_prompt = TRUE)
```

Arguments

df	Data frame to be exported to CSV format.
df_name	Optional; a custom file name for the saved CSV file. If not provided, the name of the data frame variable is used. The function adds the ".csv" extension automatically.
path	Character string specifying the directory path where the "tmp" folder and CSV file should be created. Defaults to the current working directory.
skip_prompt	Logical. If TRUE (default), skips the confirmation prompt. If FALSE, will prompt for confirmation unless the user has previously chosen to remember their preference.

Value

Invisible TRUE if successful. The function writes a CSV file to the specified path and prints a message indicating the file's location.

Author(s)

Joshua Kenney joshua.kenney@yale.edu

Examples

```
## Not run:
# Create a sample data frame
sample_df <- data.frame(
  id = 1:3,
  name = c("Alice", "Bob", "Charlie")
)

# Basic usage with prompt
to.csv(sample_df)

# Custom filename
to.csv(sample_df, "participants_data")

# Skip the confirmation prompt
to.csv(sample_df, skip_prompt = TRUE)

# Save in a different directory
to.csv(sample_df, path = "path/to/project")

## End(Not run)
```

---

to.nda   *Create NDA Submission Template*

Description

This function creates a CSV template file for National Data Archive (NDA) submissions. It extracts the data from a specified data frame and formats it according to NDA requirements, with the structure name split into base name and suffix in the first line. The function will prompt for confirmation before creating the file, with an option to remember the user's preference for future calls.

This function creates a CSV template file for National Data Archive (NDA) submissions. It extracts the data from a specified data frame and formats it according to NDA requirements, with the structure name split into base name and suffix in the first line. The function will prompt for confirmation before creating the file, with an option to remember the user's preference for future calls.

Usage

```
to.nda(
  df,
  path = ".",
  skip_prompt = TRUE,
  selected_fields = NULL,
  skip_prompts = FALSE,
  verbose = FALSE
)

to.nda(
  df,
  path = ".",
  skip_prompt = TRUE,
  selected_fields = NULL,
  skip_prompts = FALSE,
  verbose = FALSE
)
```

Arguments

df	Data frame to be used as template or character string naming a data frame in the global environment.
path	Character string specifying the directory path where the "tmp" folder and template file should be created. Defaults to the current working directory.
skip_prompt	Logical. If TRUE (default), skips the confirmation prompt. If FALSE, will prompt for confirmation unless the user has previously chosen to remember their preference.
selected_fields	
	Character vector of field names to include in template. If NULL (default), uses all fields from data frame. Used by create_nda_files() for centralized field selection.
skip_prompts	Logical. If TRUE, skip ALL interactive prompts (used when called from create_nda_files() with pre-selected fields). Default: FALSE.
verbose	Logical. If TRUE, show detailed progress messages. Default: FALSE.

Details

The function will:

1. Create a 'tmp' directory if it doesn't exist
2. Parse the structure name into base and suffix components (e.g., "eefrt01" -> "eefrt" and "01")
3. Write the structure name components as the first line
4. Write column headers as the second line
5. Write the data rows below

The function will:

1. Create a 'tmp' directory if it doesn't exist

2. Parse the structure name into base and suffix components (e.g., "eefrt01" -> "eefrt" and "01")

3. Write the structure name components as the first line

4. Write column headers as the second line

5. Write the data rows below

Value

Invisible TRUE if successful. Creates a CSV file at the specified path and prints a message with the file location.

Invisible TRUE if successful. Creates a CSV file at the specified path and prints a message with the file location.

Examples

```
## Not run:
  # First create some sample data
  eefrt01 <- data.frame(
    src_subject_id = c("SUB001", "SUB002"),
    interview_age = c(240, 360),
    interview_date = c("01/01/2023", "02/15/2023"),
    response_time = c(450, 520)
  )

  # Create the NDA template using the data frame directly
  to.nda(eefrt01)

  # Or using the name as a string
  to.nda("eefrt01")

  # Skip the confirmation prompt
  to.nda(eefrt01, skip_prompt = TRUE)

## End(Not run)

## Not run:
  # First create some sample data
  eefrt01 <- data.frame(
    src_subject_id = c("SUB001", "SUB002"),
    interview_age = c(240, 360),
    interview_date = c("01/01/2023", "02/15/2023"),
    response_time = c(450, 520)
  )

  # Create the NDA template using the data frame directly
  to.nda(eefrt01)

  # Or using the name as a string
  to.nda("eefrt01")
```

```
   # Skip the confirmation prompt
   to.nda(eefrt01, skip_prompt = TRUE)

## End(Not run)
```

---

to.rds   *Create .rds file from a data frame*

Description

This function exports a given R data frame to an RDS file format. The resulting file is saved in
the "tmp" directory. If a filename is not specified, the function uses the name of the data frame
variable. The ".rds" extension is appended automatically to the filename. The function will prompt
for confirmation before creating the file, with an option to remember the user's preference for future
calls.

Usage

```
to.rds(df, df_name = NULL, path = ".", skip_prompt = TRUE)
```

Arguments

df	Data frame to be exported to RDS format.
df_name	Optional; a custom file name for the saved RDS file. If not provided, the name of the data frame variable is used. The function adds the ".rds" extension automatically.
path	Character string specifying the directory path where the "tmp" folder and RDS file should be created. Defaults to the current working directory.
skip_prompt	Logical. If TRUE (default), skips the confirmation prompt. If FALSE, will prompt for confirmation unless the user has previously chosen to remember their preference.

Value

Invisible TRUE if successful. The function writes an RDS file to the specified path and prints a
message indicating the file's location.

Examples

```
## Not run:
# Create a sample data frame
sample_df <- data.frame(
  id = 1:3,
  name = c("Alice", "Bob", "Charlie")
)

# Basic usage with prompt
```

```
to.rds(sample_df)

# Custom filename
to.rds(sample_df, "participants_data")

# Skip the confirmation prompt
to.rds(sample_df, skip_prompt = TRUE)

# Save in a different directory
to.rds(sample_df, path = "path/to/project")

## End(Not run)
```

---

to.sav   *Create .sav SPSS file from a data frame*

Description

This function takes a R data frame and writes it to an SPSS file using the Haven package. The
resulting file will be stored in the "tmp" directory with a default name derived from the data frame
variable name, but can be customized if desired. The function will prompt for confirmation before
creating the file, with an option to remember the user's preference for future calls.

Usage

```
to.sav(df, df_name = NULL, path = ".", skip_prompt = TRUE)
```

Arguments

df   Data frame to be exported to SPSS format.

df_name   Optional; custom file name for the saved SPSS file. If not provided, the name
                of the data frame variable will be used. The ".sav" extension will be appended
                automatically.

path   Character string specifying the directory path where the "tmp" folder and SPSS
                file should be created. Defaults to the current working directory.

skip_prompt   Logical. If TRUE (default), skips the confirmation prompt. If FALSE, will
                prompt for confirmation unless the user has previously chosen to remember their
                preference.

Value

Invisible TRUE if successful. Writes an SPSS file to the designated path and prints a message
indicating the file's location.

Examples

```
## Not run:
# Create a sample data frame
sample_df <- data.frame(
  id = 1:3,
  score = c(85, 92, 78),
  group = c("A", "B", "A")
)

# Basic usage with prompt
to.sav(sample_df)

# Custom filename
to.sav(sample_df, "participants_data")

# Skip the confirmation prompt
to.sav(sample_df, skip_prompt = TRUE)

# Save in a different directory
to.sav(sample_df, path = "path/to/project")

## End(Not run)
```

---

wizaRdry-deprecated   *Deprecated functions in wizaRdry*

Description

Deprecated functions in wizaRdry

Details

These functions are deprecated and may be removed in a future release. Prefer the suggested replacements.

Deprecated functions

createCsv(...) Use to.csv(...) instead.

createRds(...) Use to.rds(...) instead.

createSpss(...) Use to.sav(...) instead.

dataFilter(...) Use sift(...) instead.

dataMerge(...) Use meld(...) instead.

dataRequest(...) Use clean(...) instead.

getRedcap(...) Use redcap(...) instead.

getSurvey(...) Use qualtrics(...) instead.

getTask(...) Use mongo(...) instead.

ndaRequest(...) Use nda(...) instead.

See Also

help("Deprecated")

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