# Package 'bupaR'

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**Type** Package

**Title** Business Process Analysis in R

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**Description** Comprehensive Business Process Analysis toolkit. Creates S3-class for event log objects, and related handler functions. Imports related packages for filtering event data, computation of descriptive statistics, handling of 'Petri Net' objects and visualization of process maps. See also packages 'edeaR','processmapR', 'eventdataR' and 'processmonitR'.

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**Imports** magrittr, dplyr, data.table, shiny, miniUI, purrr, tidyr, glue, forcats, rlang, eventdataR (>= 0.2.0), stringr, lubridate

**URL** https://www.bupar.net, https://github.com/bupaverse/bupaR

**Suggests** testthat

**NeedsCompilation** no

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## R topics documented:

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`activities` *Activities*

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## Description

Returns a `tbl_df` containing a list of all activity types in the event log, with their absolute and relative frequency

## Usage

```
activities(eventlog)

## S3 method for class 'eventlog'
activities(eventlog)

## S3 method for class 'grouped_eventlog'
activities(eventlog)
```

## Arguments

| | |
|---|---|
| `eventlog` | The event log to be used. An object of class `eventlog`. |

## Methods (by class)

- `eventlog`: Generate activity list for eventlog
- `grouped_eventlog`: Generate activity list for grouped eventlog

## See Also

`activity_id`,`activity_instance_id`, `eventlog`

## activities_to_eventlog *Create event log from list of activity instances*

### Description

Create event log from list of activity instances

### Usage

```
activities_to_eventlog(
  activity_log,
  case_id,
  activity_id,
  resource_id,
  timestamps
)
```

### Arguments

| | |
|---|---|
| activity_log | A data.frame where each row is an activity instances |
| case_id | Column name of the case identifier |
| activity_id | Column name of the activity identifier |
| resource_id | Column name of the resource identifier |
| timestamps | A vector of column names containing different timestamp. To column names will be transformed to lifecycle identifiers |

## activitylog *Create activity log*

### Description

Create activity log

### Usage

```
activitylog(activitylog, case_id, activity_id, resource_id, lifecycle_ids)
```

### Arguments

| | |
|---|---|
| activitylog | The data object to be used as activity log. This can be a data.frame or tbl_df. |
| case_id | The case classifier of the activity log. A character vector containing variable names of length 1 or more. |
| activity_id | The activity classifier of the activity log. A character vector containing variable names of length 1 or more. |
| resource_id | The resource identifier of the activity log. A character vector containing variable names of length 1 or more. |
| lifecycle_ids | The columns with timestamps refering to different lifecycle events. A character vector of 1 or more. These should have one of the folliwing names: "schedule","assign","reassign","start","suspend","resume","abort_activity","abort_case","complete","manualski These colomns should be of the Date or POSIXct class. |

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## activity_id *Activity classifier*

---

### Description

Get the activity classifier of an object of class eventlog.

### Usage

```
activity_id(x)

## S3 method for class 'eventlog'
activity_id(x)

## S3 method for class 'eventlog_mapping'
activity_id(x)

## S3 method for class 'activitylog'
activity_id(x)

## S3 method for class 'activitylog_mapping'
activity_id(x)
```

### Arguments

| | |
|---|---|
| x | An eventlog of eventlog_mapping |

### Methods (by class)

- eventlog: Retrieve activity identifier from eventlog
- eventlog_mapping: Retrieve activity identifier from eventlog mapping
- activitylog: Retrieve activity identifier from activitylog
- activitylog_mapping: Retrieve activity identifier from activitylog mapping

## See Also

eventlog, mapping

Other Eventlog classifiers: activity_instance_id(), case_id(), lifecycle_ids(), lifecycle_id(), mapping(), resource_id(), timestamp()

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activity_instance_id *Activity instance classifier*

---

## Description

Get the activity instance classifier of an object of class eventlog.

## Usage

```
activity_instance_id(x)

## S3 method for class 'eventlog'
activity_instance_id(x)

## S3 method for class 'eventlog_mapping'
activity_instance_id(x)

## S3 method for class 'activitylog'
activity_instance_id(x)

## S3 method for class 'activitylog_mapping'
activity_instance_id(x)
```

## Arguments

| | |
|---|---|
| x | An eventlog of eventlog_mapping |

## Methods (by class)

- eventlog: Retrieve activity instance identifier from eventlog
- eventlog_mapping: Retrieve activity instance identifier from eventlog mapping
- activitylog: Retrieve activity instance identifier from activitylog
- activitylog_mapping: Retrieve activity instance identifier from activitylog mapping

## See Also

Other Eventlog classifiers: activity_id(), case_id(), lifecycle_ids(), lifecycle_id(), mapping(), resource_id(), timestamp()

## activity_labels *Get vector of activity labels*

### Description

Retrieve a vector containing all unique activity labels

### Usage

```
activity_labels(eventlog)

## S3 method for class 'eventlog'
activity_labels(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Retrieve activity labels from eventlog

## act_collapse *Collapse activity labels of a sub process into a single activity*

### Description

Collapse activity labels of a sub process into a single activity

### Usage

```
act_collapse(eventlog, ..., method)

## S3 method for class 'eventlog'
act_collapse(eventlog, ..., method = c("entry_points", "consecutive"))
```

### Arguments

| | |
|---|---|
| eventlog | An eventlog object |
| ... | A series of named character vectors. The activity labels in each vector will be collapsed into one activity with the name of the vector. |
| method | Defines how activities are collapsed: "entry_points" heuristically learns which of the specified activities occur at the start and end of the subprocess and collapses accordingly. "consecutive" collapses consecutive sequences of the activities. |

## Details

There are different strategies to collapse activity labels (argument ´method´). The "entry_points" method aims to learn the start and end activities of the sub process, by looking at the first and last activity in each case over the whole log. Subsequently, it will create a new instance of the sub process each time there is an end activity followed by a start activity. This strategy will not take into account other activities happening in the mean time. The "consecutive" method will create an instance each time a new sequence of sub activities is started. This strategy will thus only take into account interruptions of the other activity labels.

## Methods (by class)

- `eventlog`: Collapse activity labels of a subprocess into a single activity

## See Also

Other Activity processing functions: `act_recode()`, `act_unite()`

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`act_recode` *Recode activity labels*

---

## Description

Recode one or more activity labels through specifying their old and new label

## Usage

```
act_recode(eventlog, ...)

## S3 method for class 'eventlog'
act_recode(eventlog, ...)
```

## Arguments

| | |
|---|---|
| `eventlog` | An object of class `eventlog`. |
| `...` | A sequence of named character vectors of length one where the names gives the new label and the value gives the old label. Labels not mentioned will be left unchanged. |

## Methods (by class)

- `eventlog`: Recode activity labels of event log

## See Also

`eventlog`, `activity_id`, `act_unite`

Other Activity processing functions: `act_collapse()`, `act_unite()`

## act_unite *Unite activity labels*

### Description

Recode two or different more activity labels two a uniform activity label

### Usage

```
act_unite(eventlog, ...)

## S3 method for class 'eventlog'
act_unite(eventlog, ...)
```

### Arguments

| | |
|---|---|
| eventlog | An object of class eventlog. |
| ... | A series of named character vectors. The activity labels in each vector will be replaced with the name. |

### Methods (by class)

- eventlog: Unite activity labels in event log

### See Also

eventlog, activity_id, act_recode

Other Activity processing functions: act_collapse(), act_recode()

## add_end_activity *Add artificial start/end activities to*

### Description

Add artificial start/end activities to

### Usage

```
add_end_activity(eventlog, label)

add_start_activity(eventlog, label)

## S3 method for class 'eventlog'
add_end_activity(eventlog, label = "End")
```

```
## S3 method for class 'grouped_eventlog'
add_end_activity(eventlog, label = "End")

## S3 method for class 'eventlog'
add_start_activity(eventlog, label = "Start")

## S3 method for class 'grouped_eventlog'
add_start_activity(eventlog, label = "Start")
```

### Arguments

| | |
|---|---|
| eventlog | Event log |
| label | Start/end activity label |

### Methods (by class)

- eventlog: Add end activity to event log
- grouped_eventlog: Add end activity to grouped event log
- eventlog: Add start activity to event log
- grouped_eventlog: Add start activity to grouped event log

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## assign_instance_id *Assign activity instance identifier to events*

---

### Description

Apply heuristics to create an activity instance identifier, so that eventlog can be made.

### Usage

```
assign_instance_id(eventlog, case_id, activity_id, timestamp, lifecycle_id)
```

### Arguments

| | |
|---|---|
| eventlog | data.frame |
| case_id | Case identifier |
| activity_id | Activity identifier |
| timestamp | Timestap |
| lifecycle_id | Lifecycle identifier |

### See Also

Other Eventlog construction helpers: convert_timestamps()

bupaR *bupaR - Business Process Analysis in R*

## Description

Functionalities for process analysis in R. This packages implements an S3-class for event log objects, and related handler functions. Imports related packages for subsetting event data, computation of descriptive statistics, handling of Petri Net objects and visualization of process maps.

cases *Cases*

## Description

Provides a fine-grained summary of an event log with characteristics for each case: the number of events, the number of activity types, the timespan, the trace, the duration and the first and last event type.

## Usage

```
cases(eventlog)

## S3 method for class 'eventlog'
cases(eventlog)
```

## Arguments

| | |
|---|---|
| eventlog | An eventlog object. eventlog. |

## Methods (by class)

- eventlog: Constructy list of cases in an eventlog

case_id *Case classifier*

## Description

Get the case classifier of an object of class eventlog

## Usage

```
case_id(x)

## S3 method for class 'eventlog'
case_id(x)

## S3 method for class 'eventlog_mapping'
case_id(x)

## S3 method for class 'activitylog'
case_id(x)

## S3 method for class 'activitylog_mapping'
case_id(x)
```

## Arguments

| | |
|---|---|
| x | An eventlog of eventlog_mapping |

## Methods (by class)

- eventlog: Retrieve case identifier from eventlog
- eventlog_mapping: Retrieve case identifier from eventlog mapping
- activitylog: Retrieve case identifier from activitylog
- activitylog_mapping: Retrieve case identifier from activitylog mapping

## See Also

eventlog, mapping

Other Eventlog classifiers: activity_id(), activity_instance_id(), lifecycle_ids(), lifecycle_id(), mapping(), resource_id(), timestamp()

## case_labels *Get vector of case labels*

### Description

Retrieve a vector containing all unique case labels

### Usage

```
case_labels(eventlog)

## S3 method for class 'eventlog'
case_labels(eventlog)

## S3 method for class 'activitylog'
case_labels(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Retrieve case labels from eventlog
- activitylog: Retrieve case labels from activitylog

## case_list *Case list*

### Description

Construct list of cases

### Usage

```
case_list(eventlog)

## S3 method for class 'eventlog'
case_list(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog object |

### Methods (by class)

- eventlog: Return case list

## convert_timestamps *Convert timestamp format*

### Description

Function converting the timestamps in the data frame to the appropriate format.

### Usage

```
convert_timestamps(x, columns, format)
```

### Arguments

| | |
|---|---|
| x | Data.frame containing events or activities. |
| columns | A character vector with one or more names of columns to convert |
| format | The format of the timestamps in the original dataset (either ymd_hms, dmy_hms, ymd_hm, ymd, dmy, dmy, ...). To be provided without quotation marks! |

### Value

Data.frame with converted timestamps

### See Also

Other Eventlog construction helpers: `assign_instance_id()`

## detect_resource_inconsistencies *Detect resource inconsistencies*

### Description

Function to detect inconsistencies in resource information between related events.

### Usage

```
detect_resource_inconsistencies(eventlog, filter_condition)
```

### Arguments

| | |
|---|---|
| eventlog | Event log object |
| filter_condition | Condition that is used to extract a subset of the activity log prior to the application of the function |

## durations *Durations*

### Description

Computes the throughput times of each case. Throughput time is defined as the interval between the start of the first event and the completion of the last event.

### Usage

```
durations(eventlog, units)

## S3 method for class 'eventlog'
durations(eventlog, units = "days")
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |
| units | The time unit in which the throughput times should be reported. |

### Methods (by class)

- eventlog: Compute durations from eventlog

## eventlog *Eventlog*

### Description

A function to instantiate an object of class eventlog by specifying a data.frame or tbl_df and appropriate case, activity and timestamp classifiers.

### Usage

```
eventlog(
  eventlog,
  case_id,
  activity_id,
  activity_instance_id,
  lifecycle_id,
  timestamp,
  resource_id,
  order,
  validate
)

ieventlog(eventlog)
```

## Arguments

| | |
|---|---|
| eventlog | The data object to be used as event log. This can be a data.frame or tbl_df. |
| case_id | The case classifier of the event log. A character vector containing variable names of length 1 or more. |
| activity_id | The activity classifier of the event log. A character vector containing variable names of length 1 or more. |
| activity_instance_id | The activity instance classifier of the event log. |
| lifecycle_id | The life cycle classifier of the event log. |
| timestamp | The timestamp of the event log. Should refer to a Date or POSIXct field. |
| resource_id | The resource identifier of the event log. A character vector containing variable names of length 1 or more. |
| order | Configure how to handle sort events with equal timestamps: auto will use the order in the original data, alphabetical will sort the activity labels by alphabet, sorted will assume that the data frame is already correctly sorted and has a column '.order', providing a column name will use this column for ordering (can be numeric of character). The latter will never overrule timestamp orderings. |
| validate | When 'TRUE' some basic checks are run on the contents of the event log such as that activity instances are not connected to more than one case or activity. Using 'FALSE' improves the performance by skipping those checks. |

## See Also

case_id, activity_id, activity_instance_id,lifecycle_id, timestamp

## Examples

```
## Not run:
data <- data.frame(case = rep("A",5),
activity_id = c("A","B","C","D","E"),
activity_instance_id = 1:5,
lifecycle_id = rep("complete",5),
timestamp = 1:5,
resource = rep("resource 1", 5))
eventlog(data,case_id = "case",
activity_id = "activity_id",
activity_instance_id = "activity_instance_id",
lifecycle_id = "lifecycle_id",
timestamp = "timestamp",
resource_id = "resource")

## End(Not run)
```

`events_to_activitylog` *Events to activities*

## Description

Events to activities

## Usage

```
events_to_activitylog(
  eventlog,
  case_id,
  activity_id,
  activity_instance_id,
  lifecycle_id,
  timestamp,
  resource_id,
  ...
)
```

## Arguments

| | |
|---|---|
| `eventlog` | The event log to be converted. An object of class `eventlog` or `data.frame` |
| `case_id` | If eventlog is data.frame, the case classifier of the event log. A character vector containing variable names of length 1 or more. |
| `activity_id` | If eventlog is data.frame, the activity classifier of the event log. A character vector containing variable names of length 1 or more. |
| `activity_instance_id` | If eventlog is data.frame, the activity instance classifier of the event log. |
| `lifecycle_id` | If eventlog is data.frame, the life cycle classifier of the event log. |
| `timestamp` | If eventlog is data.frame, the timestamp of the event log. Should refer to a Date or POSIXct field. |
| `resource_id` | If eventlog is data.frame, the resource identifier of the event log. A character vector containing variable names of length 1 or more. |
| `...` | Additional argments, i.e. for fixing resource inconsistencies |

## filter_attributes *Generic filter function for eventlog*

### Description

Generic filter function for eventlog

### Usage

```
filter_attributes(eventlog, ...)

## S3 method for class 'eventlog'
filter_attributes(eventlog, ...)

## S3 method for class 'grouped_eventlog'
filter_attributes(eventlog, ...)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog object |
| ... | Filter conditions |

### Methods (by class)

- eventlog: Filter eventlog using attributes
- grouped_eventlog: Filter grouped eventlog using attributes

## first_n *Select first n activity instances*

### Description

Select first n activity instances

### Usage

```
first_n(eventlog, n)

## S3 method for class 'eventlog'
first_n(eventlog, n)

## S3 method for class 'grouped_eventlog'
first_n(eventlog, n)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog object |
| n | Integer value |

### Methods (by class)

- eventlog: Select first n activity instances in event log
- grouped_eventlog: Select first n activity instances in grouped event log

---

## fix_resource_inconsistencies *Fix resource inconsistencies*

---

### Description

Fix resource inconsistencies

### Usage

```
fix_resource_inconsistencies(
  eventlog,
  filter_condition,
  overwrite_missings,
  detected_problems,
  details
)

## S3 method for class 'activitylog'
fix_resource_inconsistencies(
  eventlog,
  filter_condition = NULL,
  overwrite_missings = FALSE,
  detected_problems = NULL,
  details = TRUE
)

## S3 method for class 'eventlog'
fix_resource_inconsistencies(
  eventlog,
  filter_condition = NULL,
  overwrite_missings = FALSE,
  detected_problems = NULL,
  details = TRUE
)
```

### Arguments

| | |
|---|---|
| eventlog | Event log object |
| filter_condition | Condition that is used to extract a subset of the activity log prior to the application of the function |
| overwrite_missings | If events are missing, overwrite the resource if other events within activity instance are performed by single resource. Default FALSE. |
| detected_problems | If available, the problems detected that need to be fixed. If not available, the function detect_resource_inconsistenties will be called. |
| details | Show details |

### Methods (by class)

- activitylog: activitylog Fix activitylog
- eventlog: eventlog Fix eventlog

---

## group_by_activity *Group event log on activity id*

---

### Description

Group an event log by activity identifier

### Usage

```
group_by_activity(eventlog)

## S3 method for class 'eventlog'
group_by_activity(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Group eventlog on activity identifier

## group_by_activity_instance *Group event log on activity instance id*

### Description

Group an event log by activity instance identifier

### Usage

```
group_by_activity_instance(eventlog)

## S3 method for class 'eventlog'
group_by_activity_instance(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Group eventlog on activity instance identifier

## group_by_case *Group event log on case id*

### Description

Group an event log by case identifier

### Usage

```
group_by_case(eventlog)

## S3 method for class 'eventlog'
group_by_case(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Group eventlog on case identifier

## group_by_resource *Group event log on resource id*

### Description

Group an event log by resource identifier

### Usage

```
group_by_resource(eventlog)

## S3 method for class 'eventlog'
group_by_resource(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Group eventlog on resource identifier

## group_by_resource_activity *Group event log on resource and activity id*

### Description

Group an event log by resource and activity identifier

### Usage

```
group_by_resource_activity(eventlog)

## S3 method for class 'eventlog'
group_by_resource_activity(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Group an event log by resource and activity identifier

## last_n *Select last n activity instances*

### Description

Select last n activity instances

### Usage

```
last_n(eventlog, n)

## S3 method for class 'eventlog'
last_n(eventlog, n)

## S3 method for class 'grouped_eventlog'
last_n(eventlog, n)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog object |
| n | Integer value |

### Methods (by class)

- eventlog: Select first n activity instances in event log
- grouped_eventlog: Select first n activity instances in grouped event log

## lifecycles *Life cycles*

### Description

Returns a tbl_df containing a list of all life cycle types in the event log, with their absolute and relative frequency (# events)

### Usage

```
lifecycles(eventlog)

## S3 method for class 'eventlog'
lifecycles(eventlog)

## S3 method for class 'grouped_eventlog'
lifecycles(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

### Methods (by class)

- eventlog: Generate lifecycle list for eventlog
- grouped_eventlog: Generate lifecycle list for grouped eventlog

### See Also

lifecycle_id, eventlog

---

## lifecycle_id *Life cycle classifier*

---

### Description

Get the life_cycle_id of an object of class eventlog

### Usage

```
lifecycle_id(x)

## S3 method for class 'eventlog'
lifecycle_id(x)

## S3 method for class 'eventlog_mapping'
lifecycle_id(x)

## S3 method for class 'activitylog'
lifecycle_id(x)

## S3 method for class 'activitylog_mapping'
lifecycle_id(x)
```

### Arguments

| | |
|---|---|
| x | An eventlog of eventlog_mapping |

### Methods (by class)

- eventlog: Retrieve lifecycle identifier from eventlog
- eventlog_mapping: Retrieve lifecycle identifier from eventlog mapping
- activitylog: Retrieve lifecycle identifier from activitylog
- activitylog_mapping: Retrieve lifecycle identifier from activitylog mapping

## See Also

Other Eventlog classifiers: activity_id(), activity_instance_id(), case_id(), lifecycle_ids(), mapping(), resource_id(), timestamp()

---

lifecycle_ids *Life cycle classifiers*

---

## Description

Get the life_cycle_id of an object of class activitylog

## Usage

```
lifecycle_ids(x)

## S3 method for class 'eventlog'
lifecycle_ids(x)

## S3 method for class 'eventlog_mapping'
lifecycle_ids(x)

## S3 method for class 'activitylog'
lifecycle_ids(x)

## S3 method for class 'activitylog_mapping'
lifecycle_ids(x)
```

## Arguments

| | |
|---|---|
| x | An eventlog of eventlog_mapping |

## Methods (by class)

- eventlog: Retrieve lifecycle identifier from eventlog
- eventlog_mapping: Retrieve lifecycle identifier from eventlog mapping
- activitylog: Retrieve lifecycle identifier from activitylog
- activitylog_mapping: Retrieve lifecycle identifier from activitylog mapping

## See Also

Other Eventlog classifiers: activity_id(), activity_instance_id(), case_id(), lifecycle_id(), mapping(), resource_id(), timestamp()

## lifecycle_labels *Get vector of lifecycle labels*

### Description

Retrieve a vector containing all unique lifecycle labels

### Usage

```
lifecycle_labels(eventlog)

## S3 method for class 'eventlog'
lifecycle_labels(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Retrieve lifecycle labels from eventlog

## mapping *Mapping*

### Description

Prints the mapping of an event log object.

### Usage

```
mapping(eventlog)

## S3 method for class 'eventlog'
mapping(eventlog)

## S3 method for class 'activitylog'
mapping(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

### Methods (by class)

- eventlog: Retrieve identifier mapping from eventlog
- activitylog: Retrieve identifier mapping from activitylog

## See Also

Other Eventlog classifiers: activity_id(), activity_instance_id(), case_id(), lifecycle_ids(), lifecycle_id(), resource_id(), timestamp()

---

n_activities *n_activities*

---

## Description

Returns the number of activities in an event log

## Usage

```
n_activities(eventlog)

## S3 method for class 'eventlog'
n_activities(eventlog)

## S3 method for class 'grouped_eventlog'
n_activities(eventlog)
```

## Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

## Methods (by class)

- eventlog: Count the number of activities in an event log
- grouped_eventlog: Count the number of activities for a grouped event log

## See Also

Other Eventlog count functions: n_activity_instances(), n_cases(), n_events(), n_resources(), n_traces()

## n_activity_instances *n_activity_instances*

### Description

Returns the number of activity instances in an event log

### Usage

```
n_activity_instances(eventlog)

## S3 method for class 'eventlog'
n_activity_instances(eventlog)

## S3 method for class 'grouped_eventlog'
n_activity_instances(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

### See Also

Other Eventlog count functions: n_activities(), n_cases(), n_events(), n_resources(), n_traces()

## n_cases *n_cases*

### Description

Returns the number of cases in an event log

### Usage

```
n_cases(eventlog)

## S3 method for class 'eventlog'
n_cases(eventlog)

## S3 method for class 'grouped_eventlog'
n_cases(eventlog)

## S3 method for class 'activitylog'
n_cases(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

### Methods (by class)

- eventlog: Count number of cases for eventlog
- grouped_eventlog: Count number of cases for grouped eventlog
- activitylog: Count number of cases for activitylog

### See Also

Other Eventlog count functions: n_activities(), n_activity_instances(), n_events(), n_resources(), n_traces()

---

## n_events *n_events*

---

### Description

Returns the number of events in an event log

### Usage

```
n_events(eventlog)

## S3 method for class 'eventlog'
n_events(eventlog)

## S3 method for class 'grouped_eventlog'
n_events(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

### Methods (by class)

- eventlog: Count number of resources in eventlog
- grouped_eventlog: Count number of resource in eventlog

### See Also

Other Eventlog count functions: n_activities(), n_activity_instances(), n_cases(), n_resources(), n_traces()

n_resources *n_resources*

## Description

Returns the number of resources in an event log

## Usage

```
n_resources(eventlog)

## S3 method for class 'eventlog'
n_resources(eventlog)

## S3 method for class 'grouped_eventlog'
n_resources(eventlog)
```

## Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

## Methods (by class)

- eventlog: Count number of resources in eventlog
- grouped_eventlog: Count number of resources in grouped eventlog

## See Also

Other Eventlog count functions: n_activities(), n_activity_instances(), n_cases(), n_events(), n_traces()

n_traces *n_traces*

## Description

Returns the number of traces in an event log

## Usage

```
n_traces(eventlog)

## S3 method for class 'eventlog'
n_traces(eventlog)

## S3 method for class 'grouped_eventlog'
n_traces(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

### Methods (by class)

- eventlog: Count number of traces for eventlog
- grouped_eventlog: Count number of traces for grouped eventlog

### See Also

Other Eventlog count functions: n_activities(), n_activity_instances(), n_cases(), n_events(), n_resources()

---

## print.eventlog *Generic print function for eventlog*

---

### Description

Generic print function for eventlog

### Usage

```
## S3 method for class 'eventlog'
print(x, ...)
```

### Arguments

| | |
|---|---|
| x | Eventlog object |
| ... | Additional Arguments |

---

## print.eventlog_mapping *Generic print function for eventlog_mapping*

---

### Description

Generic print function for eventlog_mapping

### Usage

```
## S3 method for class 'eventlog_mapping'
print(x, ...)
```

### Arguments

| | |
|---|---|
| x | Eventlog mapping object |
| ... | Additional Arguments |

## resources *Resources*

### Description

Returns a tbl_df containing a list of all resources in the event log, with there absolute and relative frequency

### Usage

```
resources(eventlog)

## S3 method for class 'eventlog'
resources(eventlog)

## S3 method for class 'grouped_eventlog'
resources(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |

### Methods (by class)

- eventlog: Generate resource list for eventlog
- grouped_eventlog: Generate resource list for grouped eventlog

### See Also

resource_id, eventlog

## resource_id *Resource classifier*

### Description

Get the resource classifier of an object of class eventlog.

## Usage

```
resource_id(x)

## S3 method for class 'eventlog'
resource_id(x)

## S3 method for class 'eventlog_mapping'
resource_id(x)

## S3 method for class 'activitylog'
resource_id(x)

## S3 method for class 'activitylog_mapping'
resource_id(x)
```

## Arguments

| | |
|---|---|
| x | An eventlog of eventlog_mapping |

## Methods (by class)

- eventlog: Retrieve resource identifier from eventlog
- eventlog_mapping: Retrieve resource identifier from eventlog mapping
- activitylog: Retrieve resource identifier from activitylog
- activitylog_mapping: Retrieve resource identifier from activitylog mapping

## See Also

eventlog, mapping

Other Eventlog classifiers: activity_id(), activity_instance_id(), case_id(), lifecycle_ids(), lifecycle_id(), mapping(), timestamp()

---

# resource_labels *Get vector of resource labels*

---

## Description

Retrieve a vector containing all unique resource labels

## Usage

```
resource_labels(eventlog)

## S3 method for class 'eventlog'
resource_labels(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog |

### Methods (by class)

- eventlog: Retrieve resource labels from eventlog

---

## re_map *Re map*

---

### Description

Construct an eventlog using an existing mapping.

### Usage

```
re_map(x, mapping)
```

### Arguments

| | |
|---|---|
| x | The eventlog/activitylog data to be used. |
| mapping | An existing eventlog mapping created by the mapping function |

---

## set_case_id *Set individual attributes of event log*

---

### Description

Set individual attributes of event log

### Usage

```
set_case_id(eventlog, case_id)

set_activity_id(eventlog, activity_id)

set_activity_instance_id(eventlog, activity_instance_id)

set_timestamp(eventlog, timestamp)

set_resource_id(eventlog, resource_id)

set_lifecycle_id(eventlog, lifecycle_id)

## S3 method for class 'eventlog'
```

```
set_case_id(eventlog, case_id)

## S3 method for class 'grouped_eventlog'
set_case_id(eventlog, case_id)

## S3 method for class 'eventlog'
set_activity_id(eventlog, activity_id)

## S3 method for class 'grouped_eventlog'
set_activity_id(eventlog, activity_id)

## S3 method for class 'eventlog'
set_activity_instance_id(eventlog, activity_instance_id)

## S3 method for class 'grouped_eventlog'
set_activity_instance_id(eventlog, activity_instance_id)

## S3 method for class 'eventlog'
set_timestamp(eventlog, timestamp)

## S3 method for class 'grouped_eventlog'
set_timestamp(eventlog, timestamp)

## S3 method for class 'eventlog'
set_resource_id(eventlog, resource_id)

## S3 method for class 'grouped_eventlog'
set_resource_id(eventlog, resource_id)

## S3 method for class 'eventlog'
set_lifecycle_id(eventlog, lifecycle_id)

## S3 method for class 'grouped_eventlog'
set_lifecycle_id(eventlog, lifecycle_id)
```

## Arguments

| | |
|---|---|
| `eventlog` | Event log object |
| `case_id` | New case id |
| `activity_id` | New activity id |
| `activity_instance_id` | New activity instance id |
| `timestamp` | New timestamp |
| `resource_id` | New resource id |
| `lifecycle_id` | New lifecycle id |

### Methods (by class)

- eventlog: Set case id of event log
- grouped_eventlog: Set case id of grouped event log
- eventlog: Set activity id of event log
- grouped_eventlog: Set activity id of grouped event log
- eventlog: Set activity instance id of event log
- grouped_eventlog: Set activity instance id of grouped event log
- eventlog: Set timestamp of event log
- grouped_eventlog: Set timestamp of grouped event log
- eventlog: Set resource_id of event log
- grouped_eventlog: Set resource_id of grouped event log
- eventlog: Set lifecycle_id of event log
- grouped_eventlog: Set lifecycle_id of grouped event log

---

## simple_eventlog *Simple Eventlog*

---

### Description

A function to instantiate an object of class eventlog by specifying a data.frame or tbl_df and the minimally required case identifier, activity identifier and timestamp

### Usage

```
simple_eventlog(
  eventlog,
  case_id = NULL,
  activity_id = NULL,
  timestamp = NULL,
  resource_id = NULL,
  order = "auto",
  validate = TRUE
)

isimple_eventlog(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The data object to be used as event log. This can be a data.frame or tbl_df. |
| case_id | The case classifier of the event log. |
| activity_id | The activity classifier of the event log. |
| timestamp | The timestamp of the event log. |

| | |
|---|---|
| resource_id | The resource classifier of the event log (optional). |
| order | Configure how to handle sort events with equal timestamps: auto will use the order in the original data, alphabetical will sort the activity labels by alphabet, sorted will assume that the data frame is already correctly sorted and has a column '.order', providing a column name will use this column for ordering (can be numeric of character). The latter will never overrule timestamp orderings. |
| validate | When 'TRUE' some basic checks are run on the contents of the event log such as that activity instances are not connected to more than one case or activity. Using 'FALSE' improves the performance by skipping those checks. |

## See Also

eventlog,case_id, activity_id, activity_instance_id,lifecycle_id, timestamp

## Examples

```
## Not run:
data <- data.frame(case = rep("A",5),
activity_id = c("A","B","C","D","E"),
timestamp = date_decimal(1:5))
simple_eventlog(data,case_id = "case",
activity_id = "activity_id",
timestamp = "timestamp")

## End(Not run)
```

---

# slice_activities *Slice Activities*

---

## Description

Take a slice of activity instances from event log

## Usage

```
slice_activities(.data, ...)

## S3 method for class 'eventlog'
slice_activities(.data, ...)

## S3 method for class 'grouped_eventlog'
slice_activities(.data, ...)
```

## Arguments

| | |
|---|---|
| .data | Eventlog |
| ... | Slice index |

### Methods (by class)

- `eventlog`: Take a slice of activity instances from event log
- `grouped_eventlog`: Take a slice of activity instances from grouped event log

---

## `slice_events` *Slice Events*

---

### Description

Take a slice of events from event log

### Usage

```
slice_events(.data, ...)

## S3 method for class 'eventlog'
slice_events(.data, ...)

## S3 method for class 'grouped_eventlog'
slice_events(.data, ...)
```

### Arguments

| | |
|---|---|
| `.data` | Eventlog |
| `...` | Slice index |

### Methods (by class)

- `eventlog`: Take a slice of events from event log
- `grouped_eventlog`: Take a slice of events from grouped event log

---

## `standardize_lifecycle` *Standardize format of lifecycle types*

---

### Description

Standardize format of lifecycle types

### Usage

```
standardize_lifecycle(eventlog)

## S3 method for class 'eventlog'
standardize_lifecycle(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be converted. An object of class eventlog. |

### Methods (by class)

- eventlog: Standardize lifecycle types for eventlog

---

## summary.eventlog *Generic summary function for eventlog class*

---

### Description

Generic summary function for eventlog class

### Usage

```
## S3 method for class 'eventlog'
summary(object, ...)

## S3 method for class 'grouped_eventlog'
summary(object, ...)
```

### Arguments

| | |
|---|---|
| object | Eventlog object |
| ... | Additional Arguments |

### Methods (by class)

- grouped_eventlog: Summary of grouped event log

---

## timestamp *Timestamp classifier*

---

### Description

Get the timestamp classifier of an object of class eventlog

## Usage

```
timestamp(x)

## S3 method for class 'eventlog'
timestamp(x)

## S3 method for class 'eventlog_mapping'
timestamp(x)

## S3 method for class 'activitylog'
timestamp(x)

## S3 method for class 'activitylog_mapping'
timestamp(x)
```

## Arguments

| | |
|---|---|
| x | An eventlog of eventlog_mapping |

## Methods (by class)

- eventlog: Retrieve timestamp identifier from eventlog
- eventlog_mapping: Retrieve timestamp identifier from eventlog mapping
- activitylog: Retrieve timestamp identifier from activitylog
- activitylog_mapping: Retrieve timestamp identifier from activitylog mapping

## See Also

eventlog, mapping

Other Eventlog classifiers: activity_id(), activity_instance_id(), case_id(), lifecycle_ids(), lifecycle_id(), mapping(), resource_id()

---

# traces *Traces*

---

## Description

traces computes the different activity sequences of an event log together with their absolute and relative frequencies. Activity sequences are based on the start timestamp of activities.

### Usage

```
traces(eventlog, ...)

## S3 method for class 'eventlog'
traces(eventlog, ...)

## S3 method for class 'grouped_eventlog'
traces(eventlog, ...)
```

### Arguments

| | |
|---|---|
| eventlog | The event log to be used. An object of class eventlog. |
| ... | Deprecated arguments |

### Methods (by class)

- eventlog: Construct traces list for eventlog
- grouped_eventlog: Construct list of traces for grouped eventlog

### See Also

cases, eventlog

---

## trace_list *Trace list*

---

### Description

Construct trace list

### Usage

```
trace_list(eventlog)

## S3 method for class 'eventlog'
trace_list(eventlog)
```

### Arguments

| | |
|---|---|
| eventlog | Eventlog object |

### Methods (by class)

- eventlog: Construct trace list for event log

`ungroup_eventlog` *Ungroup event log*

## Description

Remove groups from event log

## Usage

```
ungroup_eventlog(eventlog)

## S3 method for class 'eventlog'
ungroup_eventlog(eventlog)
```

## Arguments

| | |
|---|---|
| `eventlog` | Eventlog |

## Methods (by class)

- `eventlog`: Remove groups from event log

# Index