Package ‘crplyr’

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Type Package

Title A ‘dplyr’ Interface for Crunch

Description In order to facilitate analysis of datasets hosted on the Crunch data platform <https://crunch.io/>, the ‘crplyr’ package implements ‘dplyr’ methods on top of the Crunch backend. The usual methods 'select', 'filter', 'group_by', 'summarize', and 'collect' are implemented in such a way as to perform as much computation on the server and pull as little data locally as possible.

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BugReports https://github.com/Crunch-io/crplyr/issues

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As a Crunch Cube can be expressed as a long data frame instead of a multidimensional array. In this form, each dimension of the cube is a variable and the cube values are expressed as columns for each measure. This is useful both to better understand what each entry of a cube represents and to work with the cube result using tidyverse tools.

Usage

```r
as_cr_tibble(x, ...)
```

Arguments

- `x`: a CrunchCube
- `...`: further arguments passed on to tibble::as_tibble()

Details

The `cr_tibble` class is a subclass of `tibble` that has extra metadata to allow `ggplot::autoplot()` to work. If you find that this extra metadata is getting in the way, you can use `as_tibble()` to get a true `tibble`.
**autocrop**

**Autocrop methods for Crunch Objects**

**Description**

The Crunch autocrop methods generate ggplots that are tailored to various Crunch objects. This allows you to visualize the object without bringing it into memory. You can select between three families of plots, which will attempt to accommodate the dimensionality of the plotted object. These plots can be further extended and customized with other ggplot methods.

**Usage**

```r
## S3 method for class 'DatetimeVariable'
autoplot(x, ...)

## S3 method for class 'NumericVariable'
autoplot(x, ...)

## S3 method for class 'CategoricalVariable'
autoplot(x, ...)

## S3 method for class 'CategoricalArrayVariable'
autoplot(x, ...)

## S3 method for class 'MultipleResponseVariable'
autoplot(x, ...)

## S3 method for class 'CrunchCube'
autoplot(x, ...)

## S3 method for class 'CrunchCubeCalculation'
autoplot(x, plot_type = "dot", ...)

## S3 method for class 'tbl_crunch_cube'
autoplot(x, plot_type = c("dot", "tile", "bar"), measure)
```

**Arguments**

- **x**
  A Crunch variable or cube aggregation

- **...**
  Additional plotting arguments

- **plot_type**
  One of "dot", "tile", or "bar" which indicates the plot family you would like to use. Higher dimensional plots add color coding or facets depending on the dimensionality of the data.

- **measure**
  The measure you wish to plot. This will usually be "count", the default but can also be ".unweighted_counts" or any other measure stored in the cube. If omitted, autoplot will select the first measure appearing in the data.
**collect**

**Value**

A `ggplot` object.

---

**collect**

**Collect a Crunch dataset from the server**

**Description**

This function brings a Crunch dataset into memory so that you can work with the data using R functions. Since this can create a long running query it is recommended that you try to filter the dataset down as much as possible before running `collect()`.

**Usage**

```r
## S3 method for class 'CrunchDataset'
collect(x, ...)
## S3 method for class 'GroupedCrunchDataset'
collect(x, ...)
```

**Arguments**

- **x**
  - A Crunch Dataset
- **...**
  - Other arguments passed to `crunch::as.data.frame()`

**Details**

When collecting a grouped CrunchDataset, the grouping will be preserved.

**Value**

A `tbl_df` or `grouped_df`

**Examples**

```r
## Not run:
ds %>%
  group_by(cyl) %>%
  select(cyl, gear) %>%
  collect()

## End(Not run)
```
filter

Filter a Crunch dataset

Description

This function applies a CrunchLogicalExpression filter to a CrunchDataset. It's a "tidy" way of doing ds[ds$var == val,].

Usage

```
## S3 method for class 'CrunchDataset'
filter(.data, ..., .preserve = FALSE)
```

Arguments

- `.data` A CrunchDataset
- `...` filter expressions
- `.preserve` Relevant when the `.data` input is grouped. If `.preserve = FALSE` (the default), the grouping structure is recalculated based on the resulting data, otherwise the grouping is kept as is.

Value

`.data` with the filter expressions applied.

Examples

```
## Not run:
ds %>%
  select(cyl, gear) %>%
  filter(cyl > 4) %>%
  collect()

## End(Not run)
```

filter_.CrunchDataset Filter a Crunch dataset (deprecated)

Description

This function is deprecated, use filter() instead. Applies a CrunchLogicalExpression filter to a CrunchDataset. It's a "tidy" way of doing ds[ds$var == val,].

Usage

```
## S3 method for class 'CrunchDataset'
filter_.(.data, ..., .dots)
```
**Arguments**

- `.data` A CrunchDataset
- `...` filter expressions
- `.dots` More dots!

**Value**

`.data` with the filter expressions applied.

---

**GroupedCrunchDataset-class**

*A Crunch Dataset "Grouped By" Something*

---

**Description**

This is a subclass of `crunch::CrunchDataset` that has a field for recording "group_by" expressions.

**Examples**

```r
## Not run:
ds <- loadDataset("Your dataset name")
class(ds) ## "CrunchDataset"
grouped_ds <- group_by(ds, var1)
class(grouped_ds) ## "GroupedCrunchDataset"

## End(Not run)
```

---

**group_by**

*Group-by for Crunch datasets*

---

**Description**

`group_by()` sets grouping variables that affect what `summarize()` computes. `ungroup()` removes any grouping variables.

**Usage**

```r
## S3 method for class 'CrunchDataset'
group_by(.data, ..., .add = FALSE)

## S3 method for class 'CrunchDataset'
ungroup(x, ...)
```
**mutate**

**Arguments**

- `.data` For `group_by()`, a Crunch Dataset
- `...` references to variables to group by, passed to `dplyr::group_by_prepare()`
- `.add` Logical: add the variables in `...` to any existing grouping variables, or replace them (the default).
- `x` For `ungroup()`, a Crunch Dataset

**Details**

Note that `group_by()` only supports grouping on variables that exist in the dataset, not ones that are derived on the fly. `dplyr::group_by()` supports that by calling `mutate()` internally, but `mutate` is not yet supported in `crplyr`.

**Value**

`group_by()` returns a `GroupedCrunchDataset` object (a `CrunchDataset` with grouping annotations). `ungroup()` returns a `CrunchDataset`.

**Examples**

```r
## Not run:
ds %>%
  group_by(cyl) %>%
  select(cyl, gear) %>%
  collect()
## End(Not run)
```

---

**mutate**

_Mutate Crunch datasets (not implemented)_

**Description**

Just a method that returns a nicer error message. `mutate()` hasn’t been implemented yet. You can, however, derive expressions on the fly in `summarize()`.

**Usage**

```r
## S3 method for class 'CrunchDataset'
mutate(.data, ...)
```

**Arguments**

- `.data` A crunch Dataset
- `...` Other arguments, currently ignored
**select**

*Select columns from a Crunch dataset*

**Description**

This function uses "tidy select" methods of subsetting the columns of a dataset. It's another way of doing `ds[, , vars]`.

**Usage**

```r
## S3 method for class 'CrunchDataset'
select(.data, ...)  
```

**Arguments**

- `.data` A CrunchDataset
- `...` names of variables in `.data` or other valid selection functions, passed to `tidyselect::vars_select()`

**Value**

`.data` with only the selected variables.

**Examples**

```r
## Not run:
ds %>%
  select(contains("ear")) %>%
  filter(gear > 4) %>%
  collect()

## End(Not run)
```

**summarize**

*Aggregate a Crunch dataset*

**Description**

This is an alternate interface to `crunch::crtabs()` that, in addition to being "tidy", makes it easier to query multiple measures at the same time.

**Usage**

```r
## S3 method for class 'CrunchDataset'
summarise(.data, ...)
```
theme_crunch

Arguments

.data  A CrunchDataset
...  named aggregations to include in the resulting table.

Details

Note that while `mutate()` is not generally supported in `crplyr`, you can derive expressions on the fly in `summarize()`.

Value

A tbl_crunch_cube or cr_tibble of results. This subclass of tibble allows ggplot2::autoplot to work, but can get in the way in some tidyverse operations. You may wish to convert to a tibble using `as_tibble()`.

Examples

```r
## Not run:
ds %>%
  filter(cyl == 6) %>%
  group_by(vs) %>%
  summarize(hp=mean(hp), sd_hp=sd(hp), count=n())
## End(Not run)
```

theme_crunch  Crunch ggplot theme

Description

Style ggplots according to Crunch style.

Usage

```r
theme_crunch(base_size = 12, base_family = "sans")
```

Arguments

base_size  Base text size
base_family  Base text family
unweighted_n

Return the unweighted counts from summarize

Description

This function allows you to return the unweighted counts from a Crunch dataset or grouped crunch dataset. It can only be used from within a summarize() call. If your dataset is unweighted, then unweighted_n() is equivalent to n().

Usage

unweighted_n()

Examples

```r
## Not run:
ds %>%
  group_by(cyl) %>%
  summarize(
    raw_counts = unweighted_n(),
    mean = mean(wt)
  )

## End(Not run)
```
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