Package 'vecrep'

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Title Compact Vector Replication

Version 0.1.0

Description Replicates vectors using ALTREP (Alternative Representations for R Objects), avoiding unnecessary memory allocation. When a vector is repeated many times, only a reference to the original data is stored rather than copying the full expanded replicates into memory. The expanded data is only materialised if it is modified, making repeated vectors cheap to create and pass around. This is particularly useful when working with large repeated sequences, such as replicated index vectors, simulation inputs, or repeated reference values in data pipelines.

Depends R (>= 3.5)

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URL https://pkg.mitchelloharawild.com/vecrep/, https://github.com/mitchelloharawild/vecrep

BugReports https://github.com/mitchelloharawild/vecrep/issues

Encoding UTF-8

Language en-GB

ByteCompile yes

Suggests spelling, testthat (>= 3.0.0)

Config/testthat/edition 3

Config/roxygen2/version 8.0.0

NeedsCompilation yes

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`rep_altrep` *Repeat a vector using ALTREP*

Description

Creates a repeated vector backed by an ALTREP representation, avoiding materialisation of the full vector in memory until necessary.

Usage

```
rep_altrep(x, times = 1L, each = 1L)
```

Arguments

`x`	A vector to repeat. Must be one of: double, integer, logical, complex, raw, character, or list (including classed variants thereof).
`times`	A single positive integer giving the number of times to repeat the whole (each-expanded) pattern. Defaults to `1L`.
`each`	A single positive integer giving the number of times each element is repeated before moving to the next. Defaults to `1L`.

Details

Supported types: double, integer, logical, complex, raw, character, and list. Classed vectors (e.g. `factor`, `Date`, `POSIXct`) are handled transparently: the class attribute is preserved on the returned object so S3 dispatch continues to work without forcing materialisation.

`times` and `each` can be combined freely, matching the behaviour of `base::rep()`: `each` replicates individual elements first, then `times` repeats the resulting pattern. Providing only `times` is equivalent to `rep(x, times = times)`; providing only `each` is equivalent to `rep(x, each = each)`.

Value

An ALTREP vector of the same type and class as `x`, with length `length(x) * each * times`.

Examples

```
rep_altrep(letters[1:4], times = 2)
rep_altrep(letters[1:4], each = 2)
rep_altrep(letters[1:4], times = 2, each = 3)
rep_altrep(1L:4L, each = 2L)
rep_altrep(c(TRUE, FALSE, NA), each = 2L, times = 3L)
rep_altrep(factor(c("a", "b", "c")), each = 2L)
```

```
rep_altrep(as.Date("2024-01-01") + 0:2, each = 2L)
rep_altrep(c("foo", "bar"), times = 5L)
rep_altrep(list(1, "a", TRUE), each = 2L, times = 2L)
```

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