

Package ‘overtureR’

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Title Load 'Overture' Datasets as 'dbplyr' and 'sf'-Ready Data Frames

Version 0.2.3

Description An integrated R interface to the 'Overture' API (<<https://docs.overturemaps.org/>>). Allows R users to return 'Overture' data as 'dbplyr' data frames or materialized 'sf' spatial data frames.

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URL <https://github.com/arthurgailes/overtureR>,
<https://arthurgailes.github.io/overtureR/>

BugReports <https://github.com/arthurgailes/overtureR/issues>

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as_overture	<i>Convert a tbl_sql object to a overture_call object</i>
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Description

This function adds the `overture_call` class to a `tbl_sql` object. It is primarily used internally#’ by the `open_curtain()` function but can also be used directly on `tbl_sql` #’ objects representing Overture Maps data.

Usage

```
as_overture(x, type, theme = get_theme_from_type(type))
```

Arguments

<code>x</code>	A <code>tbl_sql</code> object representing an Overture Maps dataset.
<code>type</code>	A string specifying the type of overture dataset to read. Setting to "*" or NULL will read all types for a given theme.
<code>theme</code>	Inferred from <code>type</code> by default. Must be set if <code>type</code> is "*" or NULL

Details

The function adds the `overture_call` class as the first class of the object

Value

A `tbl_sql` object with the additional class `overture_call` and attributes `overture_type` and `overture_theme`.

Examples

```
# The open_curtain() function already uses as_overture() internally,
# but you can also use it directly:
conn <- stage_conn()
division <- open_curtain("division", tablename = "test")

class(division)

# views
division2 <- tbl(conn, "test")
division2 <- as_overture(division2)

exit_stage(conn)
```

collect.overture_call *Convert dbplyr table to sf Object*

Description

Collects a lazy dbplyr view and materializes it as an in-memory sf table. collect_sf is a deprecated alias.

Usage

```
## S3 method for class 'overture_call'  
collect(x, ..., geom_col = "geometry", crs = 4326)  
  
collect_sf(...)
```

Arguments

x	A lazy data frame backed by a database query.
...	Further arguments passed to <code>dplyr::collect()</code> .
geom_col	The name of the geometry column. Will auto-detect names matching 'geom'.
crs	The coordinate reference system to use for the geometries, specified by its EPSG code. The default is 4326 (WGS 84).

Value

An 'sf' object with the dataset converted to spatial features.

Examples

```
bbox <- c(xmin = -120.5, ymin = 35.5, xmax = -120.0, ymax = 36.0)  
lazy_tbl <- open_curtain("building", bbox)  
collect(lazy_tbl)
```

config_extensions *Check duckdb extension and config settings*

Description

Check duckdb extension and config settings

Usage

```
config_extensions(conn)
```

Arguments

conn A connection to a duckdb database.

open_curtain *Retrieve (Spatially Filtered) Overture Datasets*

Description

Fetches overture data from AWS. If a bounding box is provided, it applies spatial filtering to only include records within that area. The core code is copied from duckdbfs, which deserves all credit for the implementation

Usage

```
open_curtain(
  type,
  spatial_filter = NULL,
  theme = get_theme_from_type(type),
  conn = NULL,
  as_sf = FALSE,
  mode = "view",
  tablename = NULL,
  read_opts = list(),
  base_url = "s3://overturemaps-us-west-2/release/2024-08-20.0",
  bbox = NULL
)
```

Arguments

type A string specifying the type of overture dataset to read. Setting to "*" or NULL will read all types for a given theme.

spatial_filter An object to spatially filter the result.

theme Inferred from type by default. Must be set if type is "*" or NULL

conn A connection to a duckdb database.

as_sf If TRUE, return an sf dataframe

mode Either "view" (default) or "table". If "table", will download the dataset into memory.

tablename The name of the table to create in the database.

read_opts A named list of key-value pairs passed to [DuckDB's read_parquet](#)

base_url Allows user to download data from a different mirror, such as a local directory, or a alternative release.

bbox alias for spatial_filter. may be deprecated in the future.

Value

An dbplyr lazy dataframe, or an sf dataframe if `as_sf` is TRUE

Examples

```
bbox <- c(xmin = -120.5, ymin = 35.5, xmax = -120.0, ymax = 36.0)
open_curtain("building", bbox)
```

record_overture	<i>Download Overture Maps Data to Local Directory</i>
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Description

This function downloads Overture Maps data to a local directory, maintaining the same partition structure as in S3. `snapshot_overture` defaults 'output_dir' to `tempdir()` and `overwrite` to TRUE.

Usage

```
record_overture(curtain_call, output_dir, overwrite = FALSE, write_opts = NULL)

snapshot_overture(
  curtain_call,
  output_dir = tempdir(),
  overwrite = TRUE,
  write_opts = NULL
)
```

Arguments

<code>curtain_call</code>	A <code>overture_call</code> object.
<code>output_dir</code>	The directory where the data will be saved.
<code>overwrite</code>	Logical, if FALSE (default), existing directories will not be overwritten.
<code>write_opts</code>	a character vector passed to DuckDB's COPY command.

Value

Another `tbl_lazy`. Use `dplyr::show_query()` to see the generated query, and use `dplyr::collect()` to execute the query and return data to R.

An 'overture_call' for the downloaded data

See Also

[DuckDB documentation on partitioned writes](#)

Examples

```
broadway <- c(xmin = -73.99, ymin = 40.76, xmax = -73.98, ymax = 40.76)
buildings <- open_curtain("building", spatial_filter = bbox)
local_buildings <- record_overture(buildings, tempdir(), overwrite = TRUE)
```

sf_as_dbplyr

Registers an sf object as a DuckDB virtual table

Description

A thin wrapper around `duckdb::duckdb_register()` that creates a virtual table, then selects the geometry column to DuckDB's GEOMETRY type in the returned dbplyr representation. Mostly useful for join and spatial operations within DuckDB. No data is copied.

Usage

```
sf_as_dbplyr(
  conn,
  name,
  sf_obj,
  geom_only = isFALSE(inherits(sf_obj, "sf")),
  overwrite = FALSE,
  ...
)
```

Arguments

conn	A DuckDB connection, created by <code>dbConnect()</code> .
name	The name for the virtual table that is registered or unregistered
sf_obj	sf object to be registered to duckdb
geom_only	if TRUE, only the geometry column is registered. Always FALSE for sfc or sfg objects
overwrite	Should an existing registration be overwritten?
...	additional arguments passed to <code>duckdb_register</code>

Details

Behind the scenes, this function creates an initial view (`name_init`) with the geometry stored as text via `sf::st_as_text`. It then creates the view name which replaces the geometry column with DuckDB's internal geometry type.

Value

a dbplyr lazy table

Examples

```
library(sf)

con <- stage_conn()
sf_obj <- st_sf(a = 3, geometry = st_sfc(st_point(1:2)))
sf_as_dbplyr(con, "test", sf_obj)

DBI::dbDisconnect(con)
```

stage_conn	<i>create a cachable duckdb connection. In dev</i>
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Description

stage_conn is primarily intended for internal use by other overtureR functions. However, it can be called directly by the user whenever it is desirable to have direct access to the connection object. The core code is copied from duckdbfs, which deserves all credit for the implementation

Usage

```
stage_conn(
  dbdir = ":memory:",
  read_only = FALSE,
  bigint = "numeric",
  config = list(),
  ...
)

strike_stage(conn = stage_conn())
```

Arguments

dbdir	Location for database files. Should be a path to an existing directory in the file system. With the default (or ""), all data is kept in RAM.
read_only	Set to TRUE for read-only operation. For file-based databases, this is only applied when the database file is opened for the first time. Subsequent connections (via the same drv object or a drv object pointing to the same path) will silently ignore this flag.
bigint	How 64-bit integers should be returned. There are two options: "numeric" and "integer64". If "numeric" is selected, bigint integers will be treated as double/numeric. If "integer64" is selected, bigint integers will be set to bit64 encoding.
config	Named list with DuckDB configuration flags, see https://duckdb.org/docs/configuration/overview#configuration-reference for the possible options. These flags are only applied when the database object is instantiated. Subsequent connections will silently ignore these flags.

... Further arguments passed to [DBI::dbConnect](#)
conn A duckdb_connection object

Details

When first called (by a user or internal function), this function both creates a duckdb connection and places that connection into a cache (overturer_conn option). On subsequent calls, this function returns the cached connection, rather than recreating a fresh connection.

This frees the user from the responsibility of managing a connection object, because functions needing access to the connection can use this to create or access the existing connection. At the close of the global environment, this function's finalizer should gracefully shutdown the connection before removing the cache.

strike_stage closes the connection.

Value

a `duckdb::duckdb()` connection object

Examples

```
con <- stage_conn()
strike_stage(con)
```


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