ENCODExplorerData

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`ENCODExplorerData` *ENCODExplorerData*

Description

This package aims to ease access to ENCODE file metadata by converting them into an easy-to-use data.table.

Details

The main feature of ENCODExplorerData are the two ENCODE file metadata data tables exported though AnnotationHub, `encode_df_lite` and `encode_df_full`). While these can be accessed directly like any other data.table, we recommend using the ENCODExplorer companion package, which contains utility functions for querying them, using the online ENCODE search function, downloading selected files, and retrieving control-treatment experimental designs from ENCODE.

This package also exposes functions for regenerating up-to-date versions of the metadata tables. See the `fetch_and_clean_raw_ENCODE_tables`, `generate_encode_df_lite` and `generate_encode_df_full` functions for more details.

See Also

`encode_df_lite`, `encode_df_full`, `fetch_and_clean_raw_ENCODE_tables`, `generate_encode_df_lite`, `generate_encode_df_full`

`clean_table` *Clean a data.frame that was produced by fetch_table_from_ENCODE_REST*

Description

`data.frames` produced when converting JSON to `data.frame` with the `fromJSON` function will sometime have columns that are lists and/or columns that are `data.frames`.

Usage

```
clean_table(table)
```

Arguments

table	The table produced by the fetch_table_from_ENCODE_REST function.

Details

This function will either remove columns that are not relevant and convert columns to a vector or data.frame.

Value

a data.frame corresponding to the cleaned version of the input data.frame.

Examples

```
clean_table(ENCODExplorerData:::fetch_table_from_ENCODE_REST("award"))
```

---

encode_df_full *ENCODE file metadata, Full version*

Description

Metadata for the files made available by ENCODE database as a data.table object. See inst/scripts/make-data.R for the generation process. encode_df_full contains all processed metadata columns, including content md5sums, cloud URLs, etc. Operations on encode_df_full will take longer than those on encode_df_lite, but may be required if some of the extra metadata columns are necessary for your needs.

Format

A data table

See Also

generate_encode_df_full, encode_df_lite

Examples

```
# You can use AnnotationHub to retrieve encode_df_full.
library(AnnotationHub)
hub <- AnnotationHub()
myfiles <- subset(hub, title=="ENCODE File Metadata (Full, 2019-04-12 build)")

# You can then have a look at the metadata of the retrieved object.
myfiles

# Finally, you can access the data.table itself by indexing into the
# object returned by subset.
myfiles[[1]]
```

encode_df_lite *ENCODE file metadata, Light version*

Description

Metadata for the files made available by ENCODE database as a `data.table` object. See `inst/scripts/make-data.R` for the generation process. `encode_df_lite` contains a curated subset of the full metadata and is faster to load and easier to work with than `encode_df_full`.

Format

A data table

See Also

`generate_encode_df_lite`, `encode_df_full`

Examples

```
# You can use AnnotationHub to retrieve encode_df_lite.
library(AnnotationHub)
hub <- AnnotationHub()
myfiles <- subset(hub, title=="ENCODE File Metadata (Light, 2019-04-12 build)")

# You can then have a look at the metadata of the retrieved object.
myfiles

# Finally, you can access the data.table itself by indexing into the
# object returned by subset.
myfiles[[1]]
```

fetch_and_clean_raw_ENCODE_tables *Fetches and preprocess the raw metadata tables from ENCODE.*

Description

Fetches and preprocess the raw metadata tables from ENCODE.

Usage

```
fetch_and_clean_raw_ENCODE_tables(
  cache_filename = "tables.RDA",
  types = get_encode_types(),
  overwrite = FALSE,
  precache = NULL
)
```

Arguments

cache_filename	A file name for caching the selected tables into.
types	The names of the tables to extract using the ENCODE rest api.
overwrite	If cache_filename already exists, should it be overwritten? Default: FALSE.
precache	A path to cache the raw metadata as returned by ENCODE and parsed using jsonlite. If NULL, no caching is performed. Default: FALSE.

Value

A list with all selected tables from ENCODE.

Examples

```
fetch_and_clean_raw_ENCODE_tables(cache_filename = "platform.RDA", types = "platform")
file.remove("platform.RDA")
```

---

generate_encode_df_full

Given the raw ENCODE tables, this generate a data.table with the full set of file metadata columns.

Description

Given the raw ENCODE tables, this generate a data.table with the full set of file metadata columns.

Usage

```
generate_encode_df_full(tables)
```

Arguments

tables	A list of ENCODE metadata tables as loaded by fetch_and_clean_raw_ENCODE_tables.

Value

a data.table containing relevant metadata for all ENCODE files.

Examples

```
    ## Not run:
        tables = fetch_and_clean_raw_ENCODE_tables()
        export_ENCODEdb_matrix(tables = tables)

## End(Not run)
```

generate_encode_df_lite *Extract file metadata from the full set of ENCODE metadata tables.*

Description

Extract file metadata from the full set of ENCODE metadata tables.

Usage

```
generate_encode_df_lite(tables)
```

Arguments

tables	A list of ENCODE metadata tables as loaded by fetch_and_clean_raw_ENCODE_tables.

Value

a `data.table` containing relevant metadata for all ENCODE files.

Examples

```
    ## Not run:
        tables = fetch_and_clean_raw_ENCODE_tables()
        export_ENCODEdb_matrix(tables = tables)

## End(Not run)
```

get_encode_types *A list of known tables from ENCODE database.*

Description

The type (table) names are extracted from the schema list from ENCODE-DCC github repository: https://github.com/ENCODE-DCC/encoded/tree/master/src/encoded/schemas

Usage

```
get_encode_types()
```

Details

The data is extracted using the github api: https://developer.github.com/guides/getting-started/

Value

a vector of `character` with the names of the known tables in the ENCODE database.

Examples

```
get_encode_types()
```

get_schema_urls *Returns the URLs for downloading the XML schemas from ENCODE's github.*

Description

Returns the URLs for downloading the XML schemas from ENCODE's github.

Usage

```
get_schema_urls()
```

Value

a `character vector` of schema download URLs.

Examples

```
ENCODExplorerData:::get_schema_urls()
```

get_schemas *Extract the schemas from ENCODE's github*

Description

The JSONs are fetched from: https://github.com/ENCODE-DCC/encoded/tree/master/src/encoded/schemas

Usage

```
get_schemas()
```

Details

The data is extracted using the github api: https://developer.github.com/guides/getting-started/

The data is then downloaded using the `jsonlite` package.

Value

a `list` of schemas.

Examples

```
ENCODExplorerData:::get_schemas()
```

Index

clean_table, 1

data.table, *2, 3*

encode_df_full, *1*, 2, *3*
encode_df_lite, *1, 2*, 3
ENCODExplorerData, 1

fetch_and_clean_raw_ENCODE_tables, *1*, 3

generate_encode_df_full, *1, 2*, 4
generate_encode_df_lite, *1*, *3*, 5
get_encode_types, 5
get_schema_urls, 6
get_schemas, 6