

ENCODExplorerData

April 5, 2023

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 through 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	<i>Clean a data.frame that was produced by fetch_table_from_ENCODE_REST</i>
-------------	---

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(ENCODEExplorerData:::fetch_table_from_ENCODE_REST("award"))
```

encode_df_full	<i>ENCODE file metadata, Full version</i>
----------------	---

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	<i>ENCODE file metadata, Light version</i>
----------------	--

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

<code>cache_filename</code>	A file name for caching the selected tables into.
<code>types</code>	The names of the tables to extract using the ENCODE rest api.
<code>overwrite</code>	If <code>cache_filename</code> already exists, should it be overwritten? Default: FALSE.
<code>precache</code>	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	<i>A list of known tables from ENCODE database.</i>
------------------	---

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	<i>Returns the URLs for downloading the XML schemas from ENCODE's github.</i>
-----------------	---

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

```
ENCODEExplorerData::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

```
ENCODEExplorerData::get_schemas()
```

Index

`clean_table`, [2](#)

`data.table`, [2](#), [3](#)

`encode_df_full`, [1](#), [2](#), [3](#)

`encode_df_lite`, [1-3](#), [3](#)

`ENCODEExplorerData`, [1](#)

`fetch_and_clean_raw_ENCODE_tables`, [1](#), [4](#)

`generate_encode_df_full`, [1](#), [3](#), [4](#)

`generate_encode_df_lite`, [1](#), [3](#), [5](#)

`get_encode_types`, [6](#)

`get_schema_urls`, [6](#)

`get_schemas`, [7](#)