Package 'zoltr'

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Title Interface to the 'Zoltar' Forecast Repository API

Version 0.5.1

Description 'Zoltar' <https://www.zoltardata.com/> is a website that provides a repository of model forecast results
in a standardized format and a central location. It supports storing, retrieving, comparing, and analyzing time
series forecasts for prediction challenges of interest to the modeling community. This package provides functions
for working with the 'Zoltar' API, including connecting and authenticating, getting information about projects,
models, and forecasts, deleting and uploading forecast data, and downloading scores.

URL https://github.com/reichlab/zoltr , http://reichlab.io/zoltr/

BugReports https://github.com/reichlab/zoltr/issues

License GPL-3

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R topics documented:

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create_model *Create a model*

Description

Creates the model in the passed project using the passed list. Fails if a model with the passed name already exists.

Usage

```
create_model(zoltar_connection, project_url, model_config)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by new_connection

project_url   url of a project in zoltar_connection's projects. this is the project the new model will be created in

model_config   A 'list' containing a Zoltar model configuration. An example: example-model-config.json . Full documentation at https://docs.zoltardata.com/.

Value

model_url of the newly-created model

Examples

```
## Not run:
  new_model_url <- create_model(conn, "https://www.zoltardata.com/project/9/",
                        jsonlite::read_json("example-model-config.json"))

## End(Not run)
```

---

create_project   *Create a project*

Description

Creates the project using the passed project configuration list. Fails if a project with the passed name already exists.

Usage

```
create_project(zoltar_connection, project_config)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by new_connection

project_config   A 'list' containing a Zoltar project configuration. note that this list validated by the server and not here. An example: cdc-project.json Full documentation at https://docs.zoltardata.com/.

Value

project_url of the newly-created project

Examples

```
## Not run:
  new_project_url <- create_project(conn, jsonlite::read_json("cdc-project.json"))

## End(Not run)
```

---

delete_forecast   *Delete a forecast*

Description

Deletes the forecast with the passed URL. This is permanent and cannot be undone.

Usage

```
delete_forecast(zoltar_connection, forecast_url)
```

Arguments

```
zoltar_connection
```
A 'ZoltarConnection' object as returned by new_connection

```
forecast_url
```
URL of a forecast in zoltar_connection's forecasts

Value

None

Examples

```
## Not run:
  delete_forecast(conn, "http://example.com/api/forecast/1/")

## End(Not run)
```

---

delete_model   *Delete a model*

Description

Deletes the model with the passed ID. This is permanent and cannot be undone.

Usage

```
delete_model(zoltar_connection, model_url)
```

Arguments

zoltar_connection
                 A 'ZoltarConnection' object as returned by [new_connection](#)

model_url   URL of a model in zoltar_connection's models

Value

None

Examples

```
## Not run:
  delete_model(conn, "http://www.zoltardata.com/api/model/1/")

## End(Not run)
```

---

delete_project   *Delete a project*

Description

Deletes the project with the passed URL. This is permanent and cannot be undone.

Usage

```
delete_project(zoltar_connection, project_url)
```

Arguments

zoltar_connection
                 A 'ZoltarConnection' object as returned by [new_connection](#)

project_url   URL of a project in zoltar_connection's projects

Value

None

Examples

```
## Not run:
  delete_project(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

---

download_forecast   *Gets a forecast's data*

Description

Gets a forecast's data

Usage

```
download_forecast(zoltar_connection, forecast_url)
```

Arguments

zoltar_connection
                   A 'ZoltarConnection' object as returned by new_connection

forecast_url   URL of a forecast in zoltar_connection's forecasts

Value

Forecast data as a 'list' in the Zoltar standard format. meta information is ignored. Full documentation at https://docs.zoltardata.com/.

Examples

```
## Not run:
  forecast_data <- download_forecast(conn, "http://example.com/api/forecast/1/")

## End(Not run)
```

---

forecasts   *Get a model's forecasts*

Description

Get a model's forecasts

Usage

```
forecasts(zoltar_connection, model_url)
```

Arguments

zoltar_connection
                   A 'ZoltarConnection' object as returned by new_connection

model_url   URL of a model in zoltar_connection's models

Value

A 'data.frame' of forecast information for the passed model

Examples

```
## Not run:
  the_forecasts <- forecasts(conn, "http://www.zoltardata.com/api/model/1/")

## End(Not run)
```

---

forecast_data_from_cdc_csv_file

Loads and converts a CDC CSV file to Zoltar's native 'list' format

---

Description

Loads and converts a CDC CSV file to Zoltar's native 'list' format

Usage

```
forecast_data_from_cdc_csv_file(season_start_year, cdc_csv_file)
```

Arguments

season_start_year

An integer specifying the "season" that cdc_csv_file is in. Used to convert EWs to YYYY_MM_DD_DATE_FORMAT. zoltr uses week 30 as the season breakpoint, e.g. the "2016/2017 season" starts with

cdc_csv_file   A CDC CSV file

Value

cdc_csv_file's data as Zoltar's native 'list' format, but only the "predictions" item, and not "meta"

Examples

```
## Not run:
  forecast_data <- forecast_data_from_cdc_csv_file(2016, "my_forecast.cdc.csv")

## End(Not run)
```

---

forecast_data_from_cdc_data_frame

'forecast_data_from_cdc_csv_file()'helper

Description

'forecast_data_from_cdc_csv_file()'helper

Usage

```
forecast_data_from_cdc_data_frame(season_start_year, cdc_data_frame)
```

Arguments

season_start_year

               as passed to 'forecast_data_from_cdc_csv_file()'

cdc_data_frame ""

Value

same as 'forecast_data_from_cdc_csv_file()'

---

forecast_info   *Gets a forecast's information*

Description

Gets a forecast's information

Usage

```
forecast_info(zoltar_connection, forecast_url)
```

Arguments

zoltar_connection

               A 'ZoltarConnection' object as returned by [new_connection](#)

forecast_url   URL of a forecast in zoltar_connection's forecasts

Value

A 'list' of forecast information for the passed forecast_url

Examples

```
## Not run:
  the_forecast_info <- forecast_info(conn, "http://example.com/api/forecast/1/")

## End(Not run)
```

---

get_resource   *Get JSON for a resource (URL). Authenticates if necessary*

Description

Get JSON for a resource (URL). Authenticates if necessary

Usage

```
get_resource(zoltar_connection, url)
```

Arguments

zoltar_connection

A 'ZoltarConnection' object as returned by new_connection

url   A string of the resource's URL

Value

A 'list' that contiains JSON information for the passed URL

---

models   *Get a project's models*

Description

Get a project's models

Usage

```
models(zoltar_connection, project_url)
```

Arguments

zoltar_connection

A 'ZoltarConnection' object as returned by new_connection

project_url   URL of a project in zoltar_connection's projects

Value

A 'data.frame' of model contents for all models in the passed project

Examples

```
## Not run:
  the_models <- models(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

---

model_info   *Get information about a model*

Description

Get information about a model

Usage

```
model_info(zoltar_connection, model_url)
```

Arguments

```
zoltar_connection
```
        A 'ZoltarConnection' object as returned by new_connection

```
model_url
```
        URL of a model in zoltar_connection's models

Value

A 'list' of model information for the passed model_url

Examples

```
## Not run:
  the_model_info <- model_info(conn, "http://www.zoltardata.com/api/model/1/")

## End(Not run)
```

---

new_connection *Get a connection to a Zoltar host*

Description

Returns a new connection object, which is the starting point for working with the Zoltar API. Once you have the connection you can call zoltar_authenticate on it, and then call projects to get a list of Project objects to start working with.

Usage

```
new_connection(host = "https://zoltardata.com")
```

Arguments

host   The Zoltar site to connect to. Does *not* include a trailing slash ('/'). Defaults
            to https://zoltardata.com

Details

A note on URLs: We require a trailing slash ('/') on all URLs. The only exception is the host arg passed to this function. This convention matches Django REST framework one, which is what Zoltar is written in.

Value

A 'ZoltarConnection' object

Examples

```
## Not run:
  conn <- new_connection()

## End(Not run)
```

---

projects *Get information about all projects*

Description

Get information about all projects

Usage

```
projects(zoltar_connection)
```

Arguments

zoltar_connection
                    A 'ZoltarConnection' object as returned by [new_connection](#)

Value

A 'data.frame' of all projects' contents

Examples

```
## Not run:
  the_projects <- projects(conn)

## End(Not run)
```

---

project_info   *Get information about a project*

Description

Get information about a project

Usage

```
project_info(zoltar_connection, project_url)
```

Arguments

zoltar_connection
                    A 'ZoltarConnection' object as returned by [new_connection](#)

project_url   URL of a project in zoltar_connection's projects

Value

A 'list' of project information for the passed project_url

Examples

```
## Not run:
  the_project_info <- project_info(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

---

scores   *Get a project's scores*

Description

Get a project's scores

Usage

```
scores(zoltar_connection, project_url)
```

Arguments

zoltar_connection

A 'ZoltarConnection' object as returned by [new_connection](#)

project_url   URL of a project in zoltar_connection's projects

Value

A 'data.frame' of score data for all models in the passed project URL

Examples

```
## Not run:
  the_scores <- scores(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

---

targets   *Get a project's targets*

Description

Get a project's targets

Usage

```
targets(zoltar_connection, project_url)
```

Arguments

zoltar_connection

A 'ZoltarConnection' object as returned by [new_connection](#)

project_url   URL of a project in zoltar_connection's projects

Value

A 'data.frame' of target contents for the passed project

Examples

```
## Not run:
  the_targets <- targets(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

---

target_info   *Get information about a target*

Description

Get information about a target

Usage

```
target_info(zoltar_connection, target_url)
```

Arguments

zoltar_connection
                 A 'ZoltarConnection' object as returned by [new_connection](#)

target_url   URL of a target in zoltar_connection's targets

Value

A 'list' of target information for the passed target_url

Examples

```
## Not run:
  the_target_info <- target_info(conn, "https://www.zoltardata.com/target/3/")

## End(Not run)
```

---

timezeros   *Get a project's timezeros*

Description

Get a project's timezeros

Usage

```
timezeros(zoltar_connection, project_url)
```

Arguments

zoltar_connection

                A 'ZoltarConnection' object as returned by [new_connection](#)

project_url   URL of a project in zoltar_connection's projects

Value

A 'data.frame' of timezero contents for the passed project

Examples

```
## Not run:
  the_timezeros <- timezeros(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

---

timezero_info   *Get information about a timezero*

Description

Get information about a timezero

Usage

```
timezero_info(zoltar_connection, timezero_url)
```

Arguments

zoltar_connection

                A 'ZoltarConnection' object as returned by [new_connection](#)

timezero_url   URL of a timezero in zoltar_connection's timezeros

Value

A 'list' of timezero information for the passed timezero_url

Examples

```
## Not run:
  the_timezero_info <- timezero_info(conn, "https://www.zoltardata.com/timezero/3/")

## End(Not run)
```

---

truth   *Get a project's truth*

Description

Get a project's truth

Usage

```
truth(zoltar_connection, project_url)
```

Arguments

zoltar_connection
                 A 'ZoltarConnection' object as returned by new_connection

project_url   URL of a project in zoltar_connection's projects

Value

A 'data.frame' of truth data for the passed project URL

Examples

```
## Not run:
  the_truth <- truth(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

---

unit_info   *Get information about a unit*

Description

Get information about a unit

Usage

```
unit_info(zoltar_connection, unit_url)
```

Arguments

zoltar_connection
                  A 'ZoltarConnection' object as returned by new_connection

unit_url   URL of a unit in zoltar_connection's zoltar_units

Value

A 'list' of unit information for the passed unit_url

Examples

```
## Not run:
  the_unit_info <- unit_info(conn, "https://www.zoltardata.com/unit/3/")

## End(Not run)
```

---

upload_forecast   *Upload a forecast*

Description

This function submits forecast data to the server for uploading. Returns an UploadFileJob object
that can be used to up, which depends on the number of current uploads in the queue. Zoltar tracks
these via 'UploadFileJob' objects.)

Usage

```
upload_forecast(
  zoltar_connection,
  model_url,
  timezero_date,
  forecast_data,
  notes = ""
)
```

Arguments

zoltar_connection
                    A 'ZoltarConnection' object as returned by new_connection

model_url   URL of a model in zoltar_connection's projects

timezero_date   The date of the project timezero you are uploading for. it is a string in format
                    YYYYMMDD

forecast_data   Forecast data as a 'list' in the Zoltar standard format

notes   Optional user notes for the new forecast

Value

An UploadFileJob URL for the upload

Examples

```
## Not run:
  forecast_data <- jsonlite::read_json("docs-predictions.json")
  upload_file_job_url <- upload_forecast(conn, "http://www.zoltardata.com/api/model/1/",
                                  "2017-01-17", forecast_data, "a mid-January forecast")

## End(Not run)
```

---

upload_info   *Get an upload's information*

Description

Gets an upload's information that can be used to track the upload's progress. (Uploads are processed
in a queue,

Usage

```
upload_info(zoltar_connection, upload_file_job_url)
```

Arguments

zoltar_connection
                    A 'ZoltarConnection' object as returned by new_connection
upload_file_job_url
                    URL of a job in zoltar_connection that was uploaded via upload_forecast

Value

A 'list' of upload information for the passed upload_file_job_url. it has these names: id, url, status,
user, created_at, updated_at, failure_message, filename, input_json, output_json

Examples

```
## Not run:
  the_upload_info <- upload_info(conn, "http://example.com/api/uploadfilejob/2/")

## End(Not run)
```

---

upload_info_forecast_url

Get a new forecast upload's url

Description

A helper function that returns the URL of a newly-uploaded forecast from upload_info.

Usage

```
upload_info_forecast_url(zoltar_connection, the_upload_info)
```

Arguments

zoltar_connection
> A 'ZoltarConnection' object as returned by new_connection

the_upload_info
> a 'list' object as returned by upload_info

Value

A URL of the new forecast

Examples

```
## Not run:
 new_forecast_url <- upload_info_forecast_url(conn, "http://example.com/api/uploadfilejob/2/")

## End(Not run)
```

---

zoltar_authenticate   *Log in to a Zoltar host*

Description

Returns a new 'ZoltarConnection' object, which is the starting point for working with the Zoltar API. Once you have the connection you can call zoltar_authenticate() on it, and call projects() to get a list of objects to start working with.

Usage

```
zoltar_authenticate(zoltar_connection, username, password)
```

Arguments

zoltar_connection

A 'ZoltarConnection' object as returned by [new_connection](#).

username   Username for the account to use on the connection's host

password   Password ""

Value

None

Examples

```
## Not run:
  zoltar_authenticate(conn, "USERNAME", "PASSWORD")

## End(Not run)
```

---

zoltar_units   *Get a project's zoltar_units*

Description

Get a project's zoltar_units

Usage

```
zoltar_units(zoltar_connection, project_url)
```

Arguments

zoltar_connection

A 'ZoltarConnection' object as returned by [new_connection](#)

project_url   URL of a project in zoltar_connection's projects

Value

A 'data.frame' of unit contents for the passed project

Examples

```
## Not run:
  the_units <- zoltar_units(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

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