Package 'rapimave'

December 16, 2017

Title R API for MaveDB

Version 0.0.0.9000

Description Allows programatic access to the MaveDB database of Deep Mutational Scans

Depends R (>= 3.1.2)

License GPL

Encoding UTF-8

LazyData true

Imports hgvsParseR, httr, RJSONIO

Suggests testthat

RoxygenNote 6.0.1

R topics documented:

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new.experiment   *New R-API MaveDB Experiment*

Description

Internal constructor that creates an immutable new Experiment object. This function is not exported
and should not be called outside of the rapimave package itself. Experiment objects are generated
by the getAllExperiments() and getExperiment() methods of a rapimave object (which itself
is generated using the new.rapimave() constructor). However, this section explains the functions
that are available for these objects.

Usage

```
new.experiment(data)
```

Details

A Experiment object offers the following getter functions:

- getScoreSets() return the list of accessions of the Experiment's ScoreSets.

- getAuthors() returns the usernames of the authors of this Experiment.

- getAccession() return the accession of this Experiment.

- getExperimentSet() return the accession of the ExperimentSet to which this Experiment be-
  longs.

Value

a new R-API MaveDB experiment object.

Examples

```
## Not run:
mave <- new.rapimave()
exp1 <- mave$getExperiment("EXP000001A")
authorIds <- exp1$getAuthors()

## End(Not run)
```

---

new.experimentSet　　　　*New R-API MaveDB ExperimentSet*

Description

Internal constructor that creates an immutable new ExperimentSet object. This function is not exported and should not be called outside of the rapimave package itself. ExperimentSet objects are generated by the `getAllExperimentSets()` and `getExperimentSet()` methods of a rapimave object (which itself is generated using the `new.rapimave()` constructor). However, this section explains the functions that are available for these objects.

Usage

```
new.experimentSet(data)
```

Details

A ExperimentSet object offers the following getter functions:

- getExperiments() returns the accessions of the experiments belonging to this ExperimentSet.
- getAuthors() returns the usernames of the authors of this ExperimentSet.
- getAccession() returns the accession of this ExperimentSet.

Value

a new R-API MaveDB ExperimentSet object.

Examples

```
## Not run:
mave <- new.rapimave()
set1 <- mave$getExperimentSet("EXPS000001")
expAccessions <- set1$getExperiments()

## End(Not run)
```

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new.rapimave　　　　*MaveDB R-API client constructor*

Description

Creates an object of type rapimave.

Usage

```
new.rapimave(baseURL = "https://www.mavedb.org/api/", certifySSL = FALSE,
  encoding = "UTF-8")
```

Arguments

baseURL	MaveDB API base-URL. Defaults to "https://www.mavedb.org/api/"
certifySSL	Logical indicating whether to certify SSL certificates when querying the database. Defaults to FALSE.
encoding	A string specifying the expected character encoding used by the webservice. Defaults to "UTF-8"

Details

The resulting object offers the following functions:

- getAllUsers() returns a list of all user objects. See `new.user` for available methods on user objects.

- getUser(username) returns the user object for the given username. Usernames are usually ORCID IDs. See https://orcid.org/ for information on ORCID. See `new.user` for available methods on user objects.

- getAllExperimentSets() returns a list of all ExperimentSet objects. See `new.experimentSet` for available methods on ExperimentSet objects.

- getExperimentSet(accession) returns the ExperimentSet object for the given accession. ExperimentSet accessions usually follow the syntax /EXPS\d+/ . See `new.experimentSet` for available methods on ExperimentSet objects.

- getAllExperiments() returns a list of all Experiment objects. See `new.experiment` for available methods on Experiment objects.

- getExperiment(accession) returns the Experiment object for the given accession. Experiment accessions usually follow the syntax /EXP\d+\w[1]/ . See `new.experiment` for available methods on Experiment objects.

- getAllScoreSets() returns a list of all ScoreSet objects. See `new.scoreSet` for available methods on ScoreSet objects.

- getScoreSet(accession) returns the ScoreSet object for the given accession. ScoreSet accessions usually follow the syntax /SCS\d+\w[1]\.\d[1]/ . See `new.scoreSet` for available methods on ScoreSet objects.

- getScores(accession) returns a `data.frame` with the scores for the given ScoreSet accession

- getCounts(accession) returns a `data.frame` with the counts for the given ScoreSet accession

Value

MaveDB R-API object with functions accessbile via the $ operator.

Examples

```
## Not run:
mave <- new.rapimave()

## End(Not run)
```

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new.scoreSet   *New R-API MaveDB ScoreSet*

Description

Internal constructor that creates an immutable new ScoreSet object. This function is not exported and should not be called outside of the rapimave package itself. ScoreSet objects are generated by the `getAllScoreSets()` and `getScoreSet()` methods of a rapimave object (which itself is generated using the `new.rapimave()` constructor). However, this section explains the functions that are available for these objects.

Usage

```
new.scoreSet(data)
```

Details

A ScoreSet object offers the following getter functions:

- getAuthors() returns the usernames of the authors of this ScoreSet.
- getAccession() returns the accession of this ScoreSet.
- getLicence() returns the licencing information governing the use of this ScoreSet.
- getCurrentVersion() If a more up-to-date version of this ScoreSet exists, that has since replaced it, this function will return the accession of the most recent version.
- getReplaces() If this ScoreSet replaces an older ScoreSet, this function returns the accession of that older ScoreSet.
- getReplacedBy() If this ScoreSet was replaced by newer ScoreSet, this function returns the accession of that newer ScoreSet in versioning history. To obtain the most recent version, use `getCurrentVersion()`.
- getCountColumns() returns the column names in the count table for this ScoreSet.
- getScoreColumns() returns the column names in the score table for this ScoreSet.

Value

a new R-API MaveDB ScoreSet object.

Examples

```
## Not run:
mave <- new.rapimave()
set1 <- mave$getScoreSet("SCS000001A.2")
scoreColNames <- set1$getScoreColumns()

## End(Not run)
```

new.user	*New R-API MaveDB User*

Description

Internal constructor that creates an immutable new user object. This function is not exported and should not be called outside of the rapimave package itself. User objects are generated by the `getAllUsers()` and `getUser()` methods of a rapimave object (which itself is generated using the `new.rapimave()` constructor). However, this section explains the functions that are available for these objects.

Usage

```
new.user(data)
```

Details

A user object offers the following getter functions:

- getUsername() return the username.

- getFirstName() return the user's first name.

- getLastName() return the user's last name.

- getExperimentSets() return the ExperimentSets attributed to the user.

- getExperiments() return the Experiments attributed to the user.

Value

a new R-API MaveDB user object.

Examples

```
## Not run:
mave <- new.rapimave()
user <- mave$getUser("0000-0003-1474-605X")
cat(user$getFirstName(),user$getLastName())

## End(Not run)
```

---

print.rapimave *Print R-API MaveDB object*

Description

Prints a human-readable summary of a R-API MaveDB object.

Usage

```
## S3 method for class 'rapimave'
print(obj)
```

Arguments

obj   the object to print

Details

Prints a list of available functions for the object.

Examples

```
## Not run:
mave <- new.rapimave()
print(mave)

## End(Not run)
```

---

print.rapimaveExperiment
                    Print R-API MaveDB Experiment

Description

Prints a human-readable summary of a R-API MaveDB Experiment object:

Usage

```
## S3 method for class 'rapimaveExperiment'
print(obj)
```

Arguments

obj   the Experiment object to print

Examples

```
## Not run:
mave <- new.rapimave()
print(mave$getExperiment("EXP000001A"))

## End(Not run)
```

---

print.rapimaveExpSet   *Print R-API MaveDB ExperimentSet*

Description

Prints a human-readable summary of a R-API MaveDB ExperimentSet object:

Usage

```
## S3 method for class 'rapimaveExpSet'
print(obj)
```

Arguments

obj   the ExperimentSet object to print

Examples

```
## Not run:
mave <- new.rapimave()
print(mave$getExperimentSet("EXPS000001"))

## End(Not run)
```

---

print.rapimaveScoreSet

Print R-API MaveDB ScoreSet

Description

Prints a human-readable summary of a R-API MaveDB ScoreSet object:

Usage

```
## S3 method for class 'rapimaveScoreSet'
print(obj)
```

Arguments

obj   the ScoreSet object to print

Examples

```
## Not run:
mave <- new.rapimave()
print(mave$getScoreSet("SCS000001A.2"))

## End(Not run)
```

---

print.rapimaveUser *Print R-API MaveDB User*

Description

Prints a human-readable summary of a R-API MaveDB User object:

Usage

```
## S3 method for class 'rapimaveUser'
print(obj)
```

Arguments

obj   the User object to print

Examples

```
## Not run:
mave <- new.rapimave()
print(mave$getUser("0000-0003-1474-605X"))

## End(Not run)
```

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