

Package ‘impectR’

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Title Access Data from the 'Impect' API

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Maintainer Florian Schmitt <florian.schmitt@impect.com>

Description Pull data from the 'Impect' Customer API <<https://glossary.impect.com/api-design>>. The package can retrieve data such as events or match sums.

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Author Impect GmbH [cph],
Florian Schmitt [aut, cre],
Thomas Walentin [ctb]

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Contents

getAccessToken	2
getEvents	3
getFormations	4
getIterations	5
getMatches	5
getPlayerIterationAverages	6
getPlayerIterationScores	7
getPlayerMatchScores	8
getPlayerMatchsums	9
getPlayerProfileScores	10

getSetPieces 11

getSquadCoefficients 12

getSquadIterationAverages 13

getSquadIterationScores 14

getSquadMatchScores 15

getSquadMatchsums 16

getSquadRatings 17

getStartingPositions 18

getSubstitutions 19

TokenBucket-class 20

Index 21

getAccessToken	<i>Get an access token from the 'Impect' Customer API</i>
----------------	---

Description

Get an access token from the 'Impect' Customer API

Usage

```
getAccessToken(  
  username,  
  password,  
  token_url =  
    "https://login.impect.com/auth/realms/production/protocol/openid-connect/token"  
)
```

Arguments

username	your 'IMPECT' username
password	your 'IMPECT' password
token_url	host specific token url

Value

a string containing a bearer token

Examples

```
# Toy example: this will error quickly (no credentials)  
try(getAccessToken(username = "invalidUser", password = "invalidPassword"))  
  
# Real usage: requires valid credentials  
## Not run:  
  token <- getAccessToken(username = "yourUsername", password = "yourPassword")  
  
## End(Not run)
```

getEvents	<i>Return a dataframe that contains all events and kpi values for a set of given match IDs</i>
-----------	--

Description

Return a dataframe that contains all events and kpi values for a set of given match IDs

Usage

```
getEvents(  
  matches,  
  token,  
  include_kpis = TRUE,  
  include_set_pieces = FALSE,  
  host = "https://api.impect.com"  
)
```

Arguments

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
include_kpis	include KPIs in event data
include_set_pieces	include additional set piece data in event data
host	host environment

Value

a dataframe containing all events and kpi values for a set of given match IDs

Examples

```
# Toy example: this will error quickly (no API token)  
try(events <- getEvents(  
  matches = c(0, 1),  
  token = "invalid",  
  include_kpis = T,  
  include_set_pieces = F  
))  
  
# Real usage: requires valid Bearer Token from `getAccessToken()`  
## Not run:  
events <- getEvents(  
  matches = c(84248, 158150),  
  token = "yourToken",  
  include_kpis = T,  
)
```

```

    include_set_pieces = F
  )

## End(Not run)

```

getFormations	<i>Return a dataframe that contains all starting formations for a set of given match IDs</i>
---------------	--

Description

Return a dataframe that contains all starting formations for a set of given match IDs

Usage

```
getFormations(matches, token, host = "https://api.impect.com")
```

Arguments

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
host	host environment

Value

a dataframe containing all starting formations for a set of given match IDs

Examples

```

# Toy example: this will error quickly (no API token)
try(events <- getFormations(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
formations <- getFormations(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)

```

getIterations	<i>Return a dataframe containing all iterations available to the user</i>
---------------	---

Description

Return a dataframe containing all iterations available to the user

Usage

```
getIterations(token, host = "https://api.impect.com")
```

Arguments

token	bearer token
host	host environment

Value

a dataframe containing all iterations available to the user

Examples

```
# Toy example: this will error quickly (no API token)
try(events <- getIterations(
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
iterations <- getIterations(
  token = "yourToken"
)

## End(Not run)
```

getMatches	<i>Return a dataframe with basic information for all matches for a given iteration ID</i>
------------	---

Description

Return a dataframe with basic information for all matches for a given iteration ID

Usage

```
getMatches(iteration, token, host = "https://api.impect.com")
```

Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

Value

a dataframe containing all matches for a given iteration ID

Examples

```
# Toy example: this will error quickly (no API token)
try(matchplan <- getMatches(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
matchplan <- getMatches(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

getPlayerIterationAverages

Return a dataframe that contains all player averages for a given iteration ID

Description

Return a dataframe that contains all player averages for a given iteration ID

Usage

```
getPlayerIterationAverages(iteration, token, host = "https://api.impect.com")
```

Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

Value

a dataframe containing the KPI averages aggregated per player and position for the given iteration ID

Examples

```
# Toy example: this will error quickly (no API token)
try(player_avgs <- getPlayerIterationAverages(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_avgs <- getPlayerIterationAverages(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

getPlayerIterationScores

Return a dataframe that contains all player scores for a given iteration ID

Description

Return a dataframe that contains all player scores for a given iteration ID

Usage

```
getPlayerIterationScores(
  iteration,
  token,
  positions = NULL,
  host = "https://api.impect.com"
)
```

Arguments

iteration	'IMPECT' iteration ID
token	bearer token
positions	optional list of position names. Must be one of: "GOALKEEPER", "LEFT_WINGBACK_DEFENDER", "RIGHT_WINGBACK_DEFENDER", "CENTRAL_DEFENDER", "DEFENSE_MIDFIELD", "CENTRAL_MIDFIELD", "ATTACKING_MIDFIELD", "LEFT_WINGER", "RIGHT_WINGER", "CENTER_FORWARD". If not submitted, function will return all positions individually.
host	host environment

Value

a dataframe containing the player scores aggregated per player for the given iteration ID and list of positions

Examples

```
# Toy example: this will error quickly (no API token)
try(player_scores <- getPlayerIterationScores(
  iteration = 0,
  positions = c("INVALID_POSITION_1", "INVALID_POSITION_2"),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_scores <- getPlayerIterationScores(
  iteration = 1004,
  positions = c("CENTRAL_DEFENDER", "DEFENSE_MIDFIELD"),
  token = "yourToken"
)

## End(Not run)
```

getPlayerMatchScores	<i>Return a dataframe that contains all player scores for a given match ID and list of positions</i>
----------------------	--

Description

Return a dataframe that contains all player scores for a given match ID and list of positions

Usage

```
getPlayerMatchScores(
  matches,
  token,
  positions = NULL,
  host = "https://api.impect.com"
)
```

Arguments

matches	'IMPECT' match IDs
token	bearer token
positions	optional list of position names. Must be one of: "GOALKEEPER", "LEFT_WINGBACK_DEFENDER", "RIGHT_WINGBACK_DEFENDER", "CENTRAL_DEFENDER", "DEFENSE_MIDFIELD", "CENTRAL_MIDFIELD", "ATTACKING_MIDFIELD", "LEFT_WINGER", "RIGHT_WINGER", "CENTER_FORWARD". If not submitted, function will return all positions individually.

host host environment

Value

a dataframe containing the scores aggregated per player and position for the given match ID and list of positions

Examples

```
# Toy example: this will error quickly (no API token)
try(player_match_scores <- getPlayerMatchScores(
  matches = c(0, 1),
  positions = c("INVALID_POSITION_1", "INVALID_POSITION_2"),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_match_scores <- getPlayerMatchScores(
  matches = c(84248, 158150),
  positions = c("CENTRAL_DEFENDER", "DEFENSE_MIDFIELD"),
  token = "yourToken"
)

## End(Not run)
```

getPlayerMatchsums	<i>Return a dataframe that contains all player matchsums for a given match ID</i>
--------------------	---

Description

Return a dataframe that contains all player matchsums for a given match ID

Usage

```
getPlayerMatchsums(matches, token, host = "https://api.impect.com")
```

Arguments

matches	'IMPECT' match IDs
token	bearer token
host	host environment

Value

a dataframe containing the matchsums aggregated per player and position for the given match ID

Examples

```
# Toy example: this will error quickly (no API token)
try(player_match_sums <- getPlayerMatchsums(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_match_sums <- getPlayerMatchsums(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

getPlayerProfileScores

Return a dataframe that contains all player profile scores for a given iteration ID

Description

Return a dataframe that contains all player profile scores for a given iteration ID

Usage

```
getPlayerProfileScores(
  iteration,
  positions,
  token,
  host = "https://api.impect.com"
)
```

Arguments

iteration	'IMPECT' iteration ID
positions	list of position names. Must be one of: "GOALKEEPER", "LEFT_WINGBACK_DEFENDER", "RIGHT_WINGBACK_DEFENDER", "CENTRAL_DEFENDER", "DEFENSE_MIDFIELD", "CENTRAL_MIDFIELD", "ATTACKING_MIDFIELD", "LEFT_WINGER", "RIGHT_WINGER", "CENTER_FORWARD"
token	bearer token
host	host environment

Value

a dataframe containing the player profilescores aggregated per player for the given iteration ID and list of positions

Examples

```
# Toy example: this will error quickly (no API token)
try(player_profile_scores <- getPlayerProfileScores(
  iteration = 0,
  positions = c("INVALID_POSITION_1", "INVALID_POSITION_2"),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
player_profile_scores <- getPlayerProfileScores(
  iteration = 1004,
  positions = c("CENTRAL_DEFENDER", "DEFENSE_MIDFIELD"),
  token = "yourToken"
)

## End(Not run)
```

getSetPieces	<i>Return a dataframe that contains all set pieces and aggregated kpi values per set piece sub phase for a set of given list of match IDs</i>
--------------	---

Description

Return a dataframe that contains all set pieces and aggregated kpi values per set piece sub phase for a set of given list of match IDs

Usage

```
getSetPieces(matches, token, host = "https://api.impect.com")
```

Arguments

matches	list fo 'IMPECT' match IDs
token	bearer token
host	host environment

Value

a dataframe containing all set pieces and aggregated kpi values per set piece sub phase for a set of given list of match IDs

Examples

```
# Toy example: this will error quickly (no API token)
try(set_pieces <- getSetPieces(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
set_pieces <- getSetPieces(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

getSquadCoefficients	<i>Return a dataframe that contains squad ratings for a given iteration ID</i>
----------------------	--

Description

Return a dataframe that contains squad ratings for a given iteration ID

Usage

```
getSquadCoefficients(iteration, token, host = "https://api.impect.com")
```

Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

Value

a dataframe containing the squad ratings for the given iteration ID

Examples

```
# Toy example: this will error quickly (no API token)
try(squad_ratings <- getSquadRatings(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
```

```
squad_ratings <- getSquadRatings(  
  iteration = 1004,  
  token = "yourToken"  
)  
  
## End(Not run)
```

getSquadIterationAverages

Return a dataframe that contains all squads averages for a given iteration ID

Description

Return a dataframe that contains all squads averages for a given iteration ID

Usage

```
getSquadIterationAverages(iteration, token, host = "https://api.impect.com")
```

Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

Value

a dataframe containing the KPI averages aggregated per squad for the given iteration ID

Examples

```
# Toy example: this will error quickly (no API token)  
try(squad_avgs <- getSquadIterationAverages(  
  iteration = 0,  
  token = "invalid"  
)  
)  
  
# Real usage: requires valid Bearer Token from `getAccessToken()`  
## Not run:  
squad_avgs <- getSquadIterationAverages(  
  iteration = 1004,  
  token = "yourToken"  
)  
  
## End(Not run)
```

`getSquadIterationScores`

Return a dataframe that contains all squads scores for a given iteration ID

Description

Return a dataframe that contains all squads scores for a given iteration ID

Usage

```
getSquadIterationScores(iteration, token, host = "https://api.impect.com")
```

Arguments

<code>iteration</code>	'IMPCET' iteration ID
<code>token</code>	bearer token
<code>host</code>	host environment

Value

a dataframe containing the squad scores aggregated per squad for the given iteration ID

Examples

```
# Toy example: this will error quickly (no API token)
try(squad_scores <- getSquadIterationScores(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_scores <- getSquadIterationScores(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

getSquadMatchScores	<i>Return a dataframe that contains squad level scores and ratios for a given match ID</i>
---------------------	--

Description

Return a dataframe that contains squad level scores and ratios for a given match ID

Usage

```
getSquadMatchScores(matches, token, host = "https://api.impect.com")
```

Arguments

matches	'IMPECT' match IDs
token	bearer token
host	host environment

Value

a dataframe containing the scores and rations aggregated per squad for the given match ID

Examples

```
# Toy example: this will error quickly (no API token)
try(squad_match_scores <- getSquadMatchScores(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_match_scores <- getSquadMatchScores(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

getSquadMatchsums	<i>Return a dataframe that contains squad level matchsums for a given match ID</i>
-------------------	--

Description

Return a dataframe that contains squad level matchsums for a given match ID

Usage

```
getSquadMatchsums(matches, token, host = "https://api.impect.com")
```

Arguments

matches	'IMPECT' match IDs
token	bearer token
host	host environment

Value

a dataframe containing the matchsums aggregated per squad for the given match ID

Examples

```
# Toy example: this will error quickly (no API token)
try(squad_match_sums <- getSquadMatchsums(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_match_sums <- getSquadMatchsums(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

getSquadRatings	<i>Return a dataframe that contains squad ratings for a given iteration ID</i>
-----------------	--

Description

Return a dataframe that contains squad ratings for a given iteration ID

Usage

```
getSquadRatings(iteration, token, host = "https://api.impect.com")
```

Arguments

iteration	'IMPECT' iteration ID
token	bearer token
host	host environment

Value

a dataframe containing the squad ratings for the given iteration ID

Examples

```
# Toy example: this will error quickly (no API token)
try(squad_ratings <- getSquadRatings(
  iteration = 0,
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
squad_ratings <- getSquadRatings(
  iteration = 1004,
  token = "yourToken"
)

## End(Not run)
```

getStartingPositions	<i>Return a dataframe that contains all starting positions for a set of given match IDs</i>
----------------------	---

Description

Return a dataframe that contains all starting positions for a set of given match IDs

Usage

```
getStartingPositions(matches, token, host = "https://api.impect.com")
```

Arguments

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
host	host environment

Value

a dataframe containing all starting positions for a set of given match IDs

Examples

```
# Toy example: this will error quickly (no API token)
try(starting_pos <- getStartingPositions(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
starting_pos <- getStartingPositions(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

getSubstitutions	<i>Return a dataframe that contains all line-up changes for a set of given match IDs</i>
------------------	--

Description

Return a dataframe that contains all line-up changes for a set of given match IDs

Usage

```
getSubstitutions(matches, token, host = "https://api.impect.com")
```

Arguments

matches	'IMPECT' match ID or a list of match IDs
token	bearer token
host	host environment

Value

a dataframe containing all line-up changes for a set of given match IDs

Examples

```
# Toy example: this will error quickly (no API token)
try(subs <- getSubstitutions(
  matches = c(0, 1),
  token = "invalid"
))

# Real usage: requires valid Bearer Token from `getAccessToken()`
## Not run:
subs <- getSubstitutions(
  matches = c(84248, 158150),
  token = "yourToken"
)

## End(Not run)
```

TokenBucket-class	<i>TokenBucket Class</i>
-------------------	--------------------------

Description

This class represents a token bucket, which is a rate limiting mechanism used to control the frequency of certain actions or requests based on available tokens. Tokens are added to the bucket at a specified rate and can be consumed when needed.

Fields

capacity The maximum number of tokens in the bucket.
tokens The number of tokens currently available in the bucket.
interval The duration in seconds after which the bucket gets refilled.
last_update The timestamp of the last update to the bucket.

Examples

```
try({  
  # create token bucket  
  bucket <- TokenBucket(  
    capacity = 10,  
    tokens = 10,  
    intervall = 1,  
    last_update = Sys.Time()  
  )  
  
  # add tokens to bucket  
  bucket$addTokens()  
  
  # check if a token is available  
  bucket$isTokenAvailable  
  
  # consume token  
  bucket$consumeToken  
})
```

Index

* classes

TokenBucket-class, [20](#)

[getAccessToken](#), [2](#)

[getEvents](#), [3](#)

[getFormations](#), [4](#)

[getIterations](#), [5](#)

[getMatches](#), [5](#)

[getPlayerIterationAverages](#), [6](#)

[getPlayerIterationScores](#), [7](#)

[getPlayerMatchScores](#), [8](#)

[getPlayerMatchsums](#), [9](#)

[getPlayerProfileScores](#), [10](#)

[getSetPieces](#), [11](#)

[getSquadCoefficients](#), [12](#)

[getSquadIterationAverages](#), [13](#)

[getSquadIterationScores](#), [14](#)

[getSquadMatchScores](#), [15](#)

[getSquadMatchsums](#), [16](#)

[getSquadRatings](#), [17](#)

[getStartingPositions](#), [18](#)

[getSubstitutions](#), [19](#)

TokenBucket (TokenBucket-class), [20](#)

TokenBucket-class, [20](#)