Package ‘vvccanvas’

October 23, 2023

Title 'Canvas' LMS API Integration
Version 0.0.3
Description
Allow R users to interact with the 'Canvas' Learning Management System (LMS) API (see <https://canvas.instructure.com/doc/api/all_resources.html> for details).
It provides a set of functions to access and manipulate course data, assignments, grades, users, and other resources available through the 'Canvas' API.

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canvas_authenticate

Authenticate with Canvas LMS API

Description

Handles authentication with the Canvas LMS API using the provided API key and base URL.
create_assignment_group

Usage

canvas_authenticate(api_key, base_url)

Arguments

api_key The API key for authenticating with the Canvas LMS API.
base_url The base URL of the Canvas instance.

Value

A list containing the authenticated 'api_key' and 'base_url'.

Examples

## Not run:
# Authenticate with the Canvas LMS API
api_key <- "your_api_key"
base_url <- "https://canvas.example.com"
canvas <- canvas_authenticate(api_key, base_url)

## End(Not run)

create_assignment_group

Create an Assignment Group in Canvas LMS

Description

Creates a new assignment group in a specific course using the Canvas LMS API.

Usage

create_assignment_group(canvas, course_id, group_name, group_position = NULL)

Arguments

canvas A list containing the 'api_key' and 'base_url' for authentication.
course_id The ID of the course in which to create the assignment group.
group_name The name of the assignment group.
group_position The position of the assignment group in the course (optional).

Value

A confirmation message that the assignment group has been created.
create_course_datalake

Create a data lake for a course.

Description
This function retrieves data from various endpoints for a specific course in the Canvas LMS API and stores the data as JSON files in a specified storage location.

Usage
create_course_datalake(canvas, course_id, storage_location)

Arguments
- canvas: An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
- course_id: The ID of the course for which to create the data lake.
- storage_location: The path to the storage location where the data files will be saved.

Value
NULL.

Note
This function retrieves data from various endpoints. Access to certain endpoints may require specific roles.

create_course_section

Create a Course Section in Canvas LMS

Description
Creates a new course section in a specific course using the Canvas LMS API.

Usage
create_course_section(
    canvas,
    course_id,
    section_name,
    section_start_date = NULL,
    section_end_date = NULL
)
create_folder

Arguments

- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **course_id**: The ID of the course in which to create the section.
- **section_name**: The name of the section.
- **section_start_date**: (Optional) The start date of the section.
- **section_end_date**: (Optional) The end date of the section.

Value

A confirmation message that the section has been created.

---

create_folder

Create a Folder in Canvas LMS

Description

Creates a new folder in a specific course using the Canvas LMS API.

Usage

create_folder(canvas, course_id, folder_name, parent_folder_id = NULL)

Arguments

- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **course_id**: The ID of the course in which to create the folder.
- **folder_name**: The name of the folder.
- **parent_folder_id**: (Optional) The ID of the parent folder in which to create the folder.

Value

A confirmation message that the folder has been created.
create_group_category  Create a Group Category in Canvas LMS

Description

Creates a new group category in a specific course using the Canvas LMS API.

Usage

create_group_category(
    canvas,
    course_id,
    category_name,
    allow_self_signup = FALSE
)

Arguments

canvas  A list containing the 'api_key' and 'base_url' for authentication.
course_id  The ID of the course in which to create the group category.
category_name  The name of the group category.
allow_self_signup  (Optional) Whether to allow self-signup for groups in the category. Defaults to FALSE.

Value

A confirmation message that the group category has been created.

create_page  Create a Page in Canvas LMS

Description

Creates a new page in a specific course using the Canvas LMS API.

Usage

create_page(canvas, course_id, page_title, page_body, published = FALSE)
download_course_file

Arguments

- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **course_id**: The ID of the course in which to create the page.
- **page_title**: The title of the page.
- **page_body**: The body/content of the page.
- **published**: (Optional) Whether the page should be published. Defaults to FALSE.

Value

A confirmation message that the page has been created.

---

**download_course_file**  Downloads a file from a given URL.

Description

This function downloads a file from a specified URL and saves it locally.

Usage

download_course_file(canvas, file_url, download_path)

Arguments

- **canvas**: An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
- **file_url**: The URL of the file to download.
- **download_path**: The path where the file should be downloaded.

Value

The path of the downloaded file.

Examples

```
## Not run:
# Download a file from a given URL
canvas <- canvas_authenticate(api_key, base_url)
file_url <- "https://example.com/file.pdf"
download_path <- "path/to/save/file.pdf"
file_path <- download_course_file(canvas, file_url, download_path)

## End(Not run)
```
get_accounts  
Get a list of accounts from the Canvas LMS API

Description
Retrieve a paginated list of accounts that the current user can view or manage.

Usage
get_accounts(canvas, include = NULL, per_page = 100)

Arguments
- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- include: A vector of additional information to include. Default is NULL.
- per_page: Number of accounts to retrieve per page. Default is 100.

Value
A list of accounts retrieved from the Canvas LMS API.

get_all_courses  
Retrieves a paginated list of all courses visible in the public index.

Description
This function retrieves a paginated list of all courses visible in the public index using the Canvas LMS API. NOTE This function might take a while to finish.

Usage
get_all_courses(canvas, per_page = 100)

Arguments
- canvas: An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
- per_page: (Optional) The number of courses to retrieve per page of results (default is 100).

Value
A data frame of courses visible in the public index.
get_assignments

Get Assignments from Canvas LMS API

Description
Fetches a list of assignments within a specific course from the Canvas LMS API.

Usage
get_assignments(canvas, course_id)

Arguments
- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- course_id: The ID of the course for which to retrieve the assignments.

Value
A list of assignments retrieved from the Canvas LMS API.

get_assignment_data
Get course-level assignment data from the Canvas LMS API

Description
Retrieves the course-level assignment data for a specific course from the Canvas LMS API.

Usage
get_assignment_data(canvas, course_id, per_page = 100)

Arguments
- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- course_id: The ID of the course for which to retrieve the assignment data.
- per_page: Number of assignment data to retrieve per page. Default is 100.

Value
A list of assignment data retrieved from the Canvas LMS API.
get_assignment_details

Get Assignment Details from Canvas LMS API

Description

Retrieves detailed information about a specific assignment from the Canvas LMS API.

Usage

get_assignment_details(canvas, course_id, assignment_id)

Arguments

canvas A list containing the 'api_key' and 'base_url' for authentication.
course_id The ID of the course in which the assignment resides.
assignment_id The ID of the assignment for which to retrieve the details.

Value

A dataframe containing the detailed information about the assignment.

get_assignment_submissions

Lists assignment submissions for a course.

Description

This function retrieves a list of assignment submissions for a specific course in the Canvas LMS API.

Usage

get_assignment_submissions(
    canvas,
    course_id,
    assignment_id = NULL,
    per_page = 100
)
Arguments

- **canvas**: An object containing the Canvas API key and base URL, obtained through the `canvas_authenticate` function.
- **course_id**: The ID of the course for which to list assignment submissions.
- **assignment_id**: (Optional) The ID of a specific assignment for which to list submissions.
- **per_page**: (Optional) The number of submissions to retrieve per page of results (default is 100).

Value

A data frame of assignment submissions for the specified course and assignment.

---

get_courses

*Get Courses from Canvas LMS API*

**Description**

Retrieves a list of courses from the Canvas LMS API.

**Usage**

```r
get_courses(canvas, per_page = 100)
```

**Arguments**

- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **per_page**: Number of courses to retrieve per page. Default is 100.

**Value**

A list of courses retrieved from the Canvas LMS API.

---

get_course_announcements

*Retrieves course announcements.*

**Description**

This function retrieves a list of announcements for a specific course in the Canvas LMS API.

**Usage**

```r
get_course_announcements(canvas, course_id, per_page = 100)
```
get_course_enrollments

Arguments

| canvas  | An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function. |
| course_id | The ID of the course for which to retrieve announcements. |
| per_page | (Optional) The number of announcements to retrieve per page of results (default is 100). |

Value

A data frame of course announcements.

get_course_details  
Get Course Details from Canvas LMS API

Description

Retrieves detailed information about a specific course from the Canvas LMS API.

Usage

get_course_details(canvas, course_id)

Arguments

| canvas  | A list containing the 'api_key' and 'base_url' for authentication. |
| course_id | The ID of the course for which to retrieve the details. |

Value

A dataframe containing the detailed information about the course.

get_course_enrollments  
Retrieves the course enrollments for a course.

Description

This function retrieves the enrollments of students and other roles in a specific course in the Canvas LMS API.

Usage

get_course_enrollments(canvas, course_id, per_page = 100)
get_course_files

Arguments

- **canvas**: An object containing the Canvas API key and base URL, obtained through the `canvas_authenticate` function.
- **course_id**: The ID of the course for which to fetch the enrollments.
- **per_page**: (Optional) The number of enrollments to retrieve per page of results (default is 100).

Value

A data frame of course enrollments for the specified course.

get_course_files (Retrieves a list of files within a course.)

Description

This function retrieves a list of files within a specific course in the Canvas LMS API.

Usage

```
get_course_files(canvas, course_id, per_page = 100)
```

Arguments

- **canvas**: An object containing the Canvas API key and base URL, obtained through the `canvas_authenticate` function.
- **course_id**: The ID of the course for which to fetch the files.
- **per_page**: (Optional) The number of files to retrieve per page of results (default is 100).

Value

A data frame of files within the specified course.
get_course_folders  
Retrieves course folders.

**Description**

This function retrieves a list of folders for a specific course in the Canvas LMS API.

**Usage**

```
get_course_folders(canvas, course_id, per_page = 100)
```

**Arguments**

- `canvas`: An object containing the Canvas API key and base URL, obtained through the `canvas_authenticate` function.
- `course_id`: The ID of the course for which to retrieve folders.
- `per_page`: Number of courses to retrieve per page. Default is 100.

**Value**

A data frame of course folders.

get_course_groups  
Retrieves the list of groups in a course.

**Description**

This function retrieves the list of groups in a specific course in the Canvas LMS API.

**Usage**

```
get_course_groups(canvas, course_id, per_page = 100)
```

**Arguments**

- `canvas`: A list containing the 'api_key' and 'base_url' for authentication.
- `course_id`: The ID of the course for which to fetch the groups.
- `per_page`: (Optional) The number of groups to retrieve per page of results (default is 100).

**Value**

A data frame of groups in the specified course.
**get_course_pages**  
Retrieves the pages within a course.

**Description**  
This function retrieves the pages within a specific course in the Canvas LMS API.

**Usage**  
```
get_course_pages(canvas, course_id, per_page = 100)
```

**Arguments**
- `canvas`: An object containing the Canvas API key and base URL, obtained through the `canvas_authenticate` function.
- `course_id`: The ID of the course for which to fetch the pages.
- `per_page`: (Optional) The number of pages to retrieve per page of results (default is 50).

**Value**
A list of pages within the specified course.

---

**get_course_participation**  
Get course-level participation data from Canvas LMS API

**Description**  
Fetches the participation data for a specific course from the Canvas LMS API.

**Usage**  
```
get_course_participation(canvas, course_id)
```

**Arguments**
- `canvas`: A list containing the 'api_key' and 'base_url' for authentication.
- `course_id`: The ID of the course for which to retrieve the participation data.

**Value**
The participation data for the specified course retrieved from the Canvas LMS API.
get_course_quizzes  Retrieves course quizzes.

Description

This function retrieves a list of quizzes for a specific course in the Canvas LMS API.

Usage

get_course_quizzes(canvas, course_id, per_page = 100)

Arguments

canvas  An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
course_id  The ID of the course for which to retrieve quizzes.
per_page  (Optional) The number of quizzes to retrieve per page of results (default is 100).

Value

A data frame of course quizzes.

get_course_sections  Retrieves course sections.

Description

This function retrieves a list of sections for a specific course in the Canvas LMS API.

Usage

get_course_sections(canvas, course_id, per_page = 100)

Arguments

canvas  An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
course_id  The ID of the course for which to retrieve sections.
per_page  (Optional) The number of sections to retrieve per page of results (default is 100).

Value

A data frame of course sections.
**get_course_students**

*Retrieves the list of students in a course.*

**Description**

This function retrieves the list of students enrolled in a specific course in the Canvas LMS API.

**Usage**

```
get_course_students(canvas, course_id, per_page = 100)
```

**Arguments**

- **canvas**
  - An object containing the Canvas API key and base URL, obtained through the `canvas_authenticate` function.
- **course_id**
  - The ID of the course for which to fetch the students.
- **per_page**
  - (Optional) The number of students to retrieve per page of results (default is 100).

**Value**

A data frame of students enrolled in the specified course.

---

**get_department_grade_data**

*Get department-level grade data from the Canvas LMS API*

**Description**

Retrieves the department-level grade data for a specific account and term from the Canvas LMS API.

**Usage**

```
get_department_grade_data(
  canvas,
  account_id,
  type = "current",
  term_id = NULL,
  per_page = 100
)
```
get_department_participation_data

Description

Retrieves the department-level participation data for a specific account and term from the Canvas LMS API.

Usage

get_department_participation_data(
  canvas,
  account_id,
  type = "current",
  term_id = NULL,
  per_page = 100
)

Arguments

- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **account_id**: The ID of the account for which to retrieve the participation data.
- **type**: The type of courses to include in the data. Can be 'current', 'completed', or 'term'.
- **term_id**: The ID of the term for which to retrieve the participation data. Only used when type is 'terms/<term_id>'.
- **per_page**: Number of participation data to retrieve per page. Default is 100.

Value

A data frame of participation data retrieved from the Canvas LMS API.
get_department_statistics

Get department-level statistics from the Canvas LMS API

Description

Retrieves department-level statistics for a specific account and term from the Canvas LMS API.

Usage

get_department_statistics(canvas, account_id, type = "current", term_id = NULL)

Arguments

canvas A list containing the 'api_key' and 'base_url' for authentication.
account_id The ID of the account for which to retrieve the statistics.
type The type of courses to include in the data. Can be 'current', 'completed', or 'term'.
term_id The ID of the term for which to retrieve the statistics. Only used when type is 'term'.

Value

A list of department-level statistics retrieved from the Canvas LMS API.

get_department_statistics_by_subaccount

Get department-level statistics by subaccount from the Canvas LMS API

Description

Retrieves department-level statistics for a specific account and term from the Canvas LMS API.

Usage

get_department_statistics_by_subaccount(
    canvas,
    account_id,
    type = "current",
    term_id = NULL
)
get_discussions

Arguments

canvas A list containing the 'api_key' and 'base_url' for authentication.
account_id The ID of the account for which to retrieve the statistics.
type The type of courses to include in the data. Can be 'current', 'completed', or 'term'.
term_id The ID of the term for which to retrieve the statistics. Only used when type is 'terms/<term_id>'.

Value

A list of department-level statistics retrieved from the Canvas LMS API.

get_discussions Retrieves the discussion topics within a course.

Description

This function retrieves the discussion topics within a specific course in the Canvas LMS API.

Usage

def get_discussions(canvas, course_id, per_page=100)

Arguments

canvas An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
course_id The ID of the course for which to fetch the discussion topics.
per_page The number of entries to show

Value

A list of discussion topics within the specified course.
get_group_categories  Get group categories for a context

Description
This function retrieves the group categories for a specific context (e.g., course) in the Canvas LMS API.

Usage
get_group_categories(canvas, course_id)

Arguments
- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **course_id**: The ID of the course for which to retrieve the group categories.

Value
A data frame of group categories in the specified context.

group_info  Get information about a single group

Description
This function retrieves information about a specific group in the Canvas LMS API.

Usage
get_group_info(canvas, group_id)

Arguments
- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **group_id**: The ID of the group for which to retrieve the information.

Value
A list containing the information about the specified group.
get_group_memberships  

Get group memberships

Description
This function retrieves the memberships for a specific group in the Canvas LMS API.

Usage
get_group_memberships(canvas, group_id)

Arguments
- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- group_id: The ID of the group for which to retrieve the memberships.

Value
A data frame of memberships in the specified group.

get_group_users

Get users in a group

Description
This function retrieves the users in a specific group in the Canvas LMS API.

Usage
get_group_users(canvas, group_id)

Arguments
- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- group_id: The ID of the group for which to retrieve the users.

Value
A data frame of users in the specified group.
get_modules

Retrieves the modules within a course.

Description

This function retrieves the modules within a specific course in the Canvas LMS API.

Usage

get_modules(canvas, course_id, per_page = 100)

Arguments

- canvas: An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
- course_id: The ID of the course for which to fetch the modules.
- per_page: The number of entries to show

Value

A list of modules within the specified course.

get_module_items

Retrieves the items within a specific module.

Description

This function retrieves the items within a specific module of a course in the Canvas LMS API.

Usage

get_module_items(canvas, course_id, module_id)

Arguments

- canvas: An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
- course_id: The ID of the course containing the module.
- module_id: The ID of the module for which to fetch the items.

Value

A list of items within the specified module.
get_page_content  
Retrieves the content body of a specified page.

Description
This function retrieves the content body of a specified page within a course in the Canvas LMS API.

Usage
get_page_content(canvas, course_id, page_id)

Arguments
- canvas: An object containing the Canvas API key and base URL, obtained through the canvas_authenticate function.
- course_id: The ID of the course to which the page belongs.
- page_id: The ID of the page for which to fetch the content body.

Value
The content body of the specified page.

get_student_summaries  
Get student summaries for a course from Canvas LMS API

Description
Retrieves the student summaries for a specific course from the Canvas LMS API.

Usage
get_student_summaries(canvas, course_id, per_page = 100)

Arguments
- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- course_id: The ID of the course for which to retrieve the student summaries.
- per_page: Number of student summaries to retrieve per page. Default is 100.

Value
A list of student summaries retrieved from the Canvas LMS API.
get_user_course_assignment_data

Get user-in-a-course-level assignment data from the Canvas LMS API

Description

Retrieves user-in-a-course-level assignment data for a specific course and student from the Canvas LMS API.

Usage

get_user_course_assignment_data(canvas, course_id, student_id)

Arguments

- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- course_id: The ID of the course for which to retrieve the assignment data.
- student_id: The ID of the student for which to retrieve the assignment data.

Value

A list of user-in-a-course-level assignment data retrieved from the Canvas LMS API.

get_user_course_messaging_data

Get user-in-a-course-level messaging data from the Canvas LMS API

Description

Retrieves user-in-a-course-level messaging data for a specific course and student from the Canvas LMS API.

Usage

get_user_course_messaging_data(canvas, course_id, student_id)

Arguments

- canvas: A list containing the 'api_key' and 'base_url' for authentication.
- course_id: The ID of the course for which to retrieve the messaging data.
- student_id: The ID of the student for which to retrieve the messaging data.

Value

A list of user-in-a-course-level messaging data retrieved from the Canvas LMS API.
get_user_course_participation_data

*Get user-in-a-course-level participation data from the Canvas LMS API*

**Description**
Retrieves user-in-a-course-level participation data for a specific course and student from the Canvas LMS API.

**Usage**

```python
def get_user_course_participation_data(canvas, course_id, student_id):
```

**Arguments**

- **canvas**: A list containing the 'api_key' and 'base_url' for authentication.
- **course_id**: The ID of the course for which to retrieve the participation data.
- **student_id**: The ID of the student for which to retrieve the participation data.

**Value**
A list of user-in-a-course-level participation data retrieved from the Canvas LMS API.

---

post_new_discussion

*Post a New Discussion in Canvas LMS*

**Description**
Creats a new discussion topic in a specific course using the Canvas LMS API.

**Usage**

```python
def post_new_discussion(
    canvas,  
    course_id,  
    discussion_title,  
    discussion_message,  
    discussion_is_announcement = FALSE)
```
Arguments

canvas A list containing the 'api_key' and 'base_url' for authentication.
course_id The ID of the course in which to create the discussion.
discussion_title The title of the discussion topic.
discussion_message The initial message content of the discussion topic.
discussion_is_announcement (Optional) Whether the discussion should be an announcement. Defaults to FALSE.

Value

A confirmation message that the discussion has been created.
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