

Cambridge Datasets Application

Documentation

Version 1.0

haselwimmer@gmail.com

3rd August 2019

Contents

1. Overview	3
2. Using Application - Overview.....	4
2.1. External user	4
2.2. Post-Submission	9
3. Setting Up Application	14
3.1. Installing Software.....	14
3.2. Configuring Software	14
3.3. Setting Up Software for First Use	15
3.4. CSV Import File	22
4. Technical Overview.....	23
4.1. Drupal Content Types.....	23
4.2. Drupal Views.....	25
4.3. PHP Code	28
4.4 Drupal Tutorial	28

1. Overview

The **Cambridge Datasets Application** allows external users to submit an application to access one or more Cambridge University datasets. Through the Datasets software, the user's application is passed to internal reviewers for comments and a final reviewer rejects or approves the external user's application based on the comments of other reviewers.

If an application is approved, access to the relevant dataset(s) is configured manually and the external user is notified accordingly, for example by sending an email with login details. While there is significant scope to automate this final stage of the process, no automation has been implemented in this version of the application – and is likely to vary significantly from department to department depending on how datasets are stored.

The **Cambridge Datasets Application** uses Drupal as an application framework as it provides good management of users through pre-existing admin screens, close integration with Cambridge University's Raven Single Sign On (SSO), and runs on PHP/MySQL which has a large support base in the University. Switching between Cambridge University's "Project Light" design template and other design templates is also relatively easy through Drupal's templating system.

The **Cambridge Datasets Application** was created in Drupal 7, as opposed to Drupal 8, to provide consistency with the University's existing Drupal 7 "Project Light" templates and Drupal 7 "Cambridge Profile". The "Cambridge Datasets Application" extends the "Cambridge 2.0 Full Profile" available from:

<https://github.com/misd-service-development/drupal-cambridge-profile/releases>

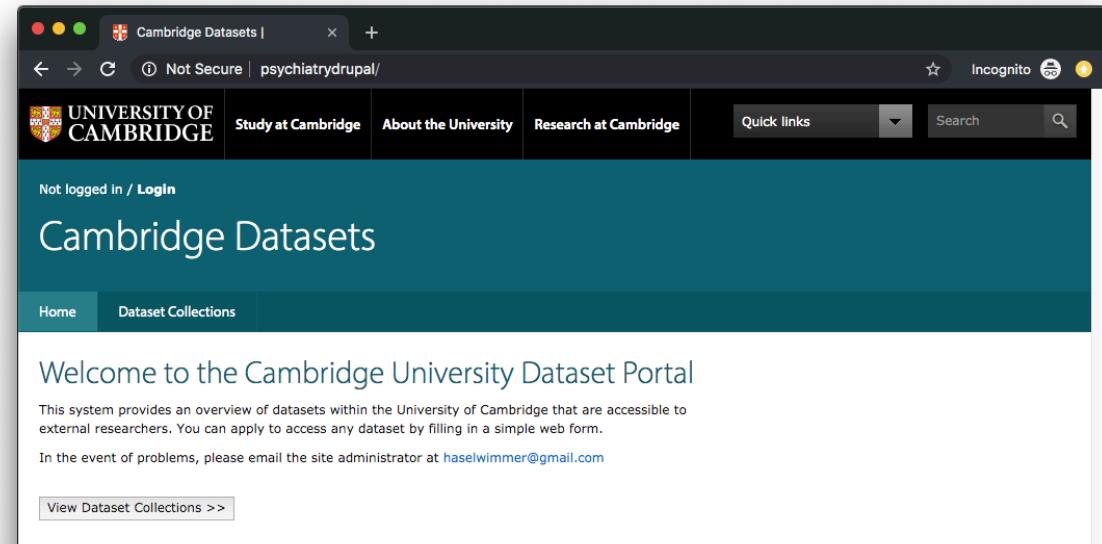
The specific components of the Drupal application are as follows:

- **1. Drupal Content Types and Views:** A variety of Drupal *content types* were created within Drupal to manage different types of data, eg. "Application" and "Dataset". A range of Drupal *views* were used to display the data in specific ways, eg. "Edit applications".
- **2. Drupal Module:** The Drupal PHP module **cambridge_datasets** provides more bespoke functionality not possible through Drupal's existing UI interface. The module interacts with Drupal's object layer to create, edit and delete content in a Drupal-compliant way.
- **3. Interaction with other systems:** A "cron job" (ie. scheduled job) runs on the webserver to force Drupal to process its mail queue. It may also be appropriate to integrate the application with external data storage such as "Amazon S3" to ensure successful applicants are given access to datasets in an automated way.

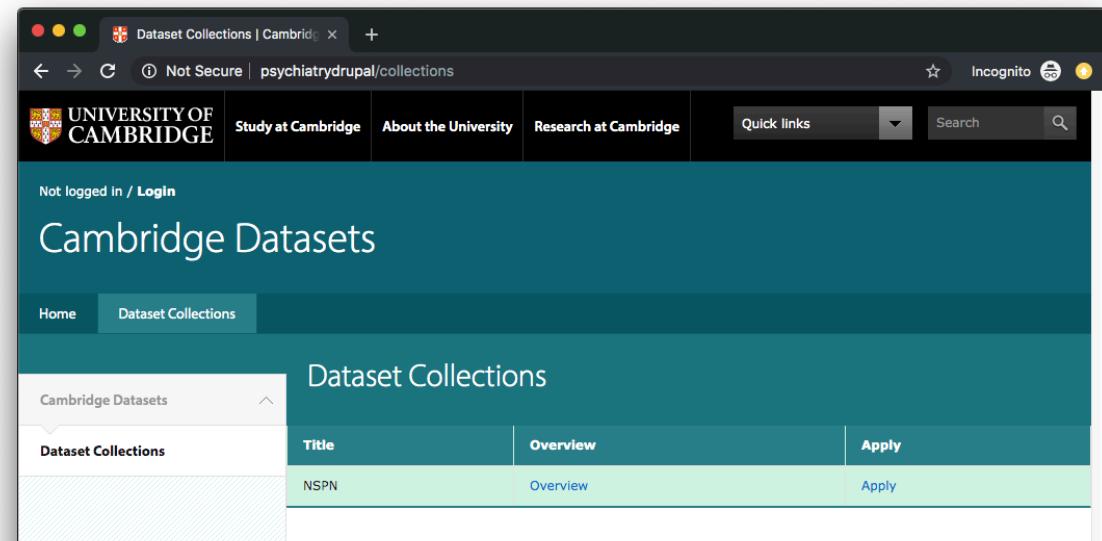
2. Using Application - Overview

2.1. External user

An external user loads a **Cambridge Datasets** website:



They click “View Dataset Collections” to view list of dataset collections:



They then click “Overview” to view an overview of a specific “Dataset Collection” including the list of datasets within that collection:

The screenshot shows a web browser window titled "Dataset Collection Overview". The URL is "Not Secure | psychiatrytest/overview/1". The header includes the University of Cambridge logo and links for "Study at Cambridge", "About the University", "Research at Cambridge", "Quick links", "Search", and "Incognito". Below the header, it says "Not logged in / Login" and "Cambridge Datasets". A navigation bar has "Home" and "Dataset Collections" tabs. The main content area is titled "Dataset Collection Overview" and "NSPN". It displays a list of datasets under the heading "Datasets". There are two input fields: "Code" and "Title", each with a search icon, followed by an "Apply" button. A table lists five datasets:

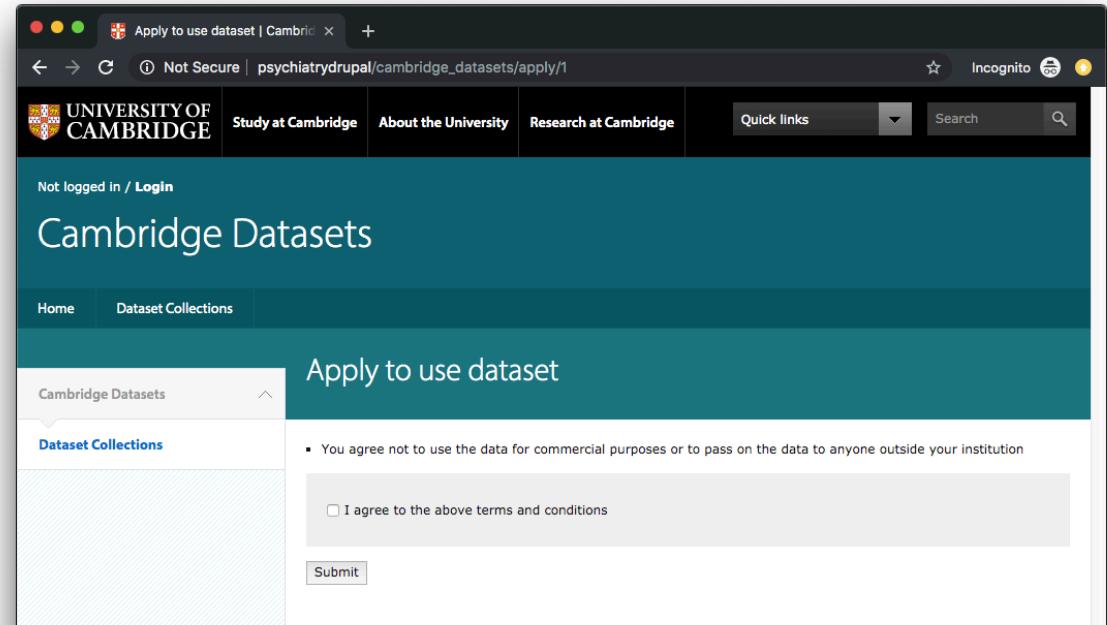
Code	Title
code1	Imaging Data: Collection of brains scans
code2	Interview Data: Interviews with participants
code3	Imaging Data: Brain ECT patterns
code4	Interview Data: Post TV debrief
code5	Clinical Trials: Bloods tests

The user can enter text in the “Code” or “Title” input fields and click “Apply” to filter the visible datasets:

The screenshot shows the same web browser window as the previous one, but with a different filter applied. In the "Title" input field, the user has typed "TV". The "Apply" button is visible. The table now shows only one dataset that matches the filter:

Code	Title
code4	Interview Data: Post TV debrief

The user can apply for access to one or more datasets within the dataset collection by clicking “Apply for access to data”. They will be presented with an initial terms and conditions page:



Once the user has agreed to the terms and conditions, they are transferred to an application form where they can fill in their details, describe their research proposal and select their desired datasets:

Apply to use dataset | Cambridge Datasets

Not Secure | psychiatrydrupal/cambridge_datasets/apply/1

Apply to use dataset

Cambridge Datasets

Dataset Collections

First Name: Joe

Last Name: Bloggs

Email: joe@bloggs.com

Academic Position: Director

Institution: ACME University

Department: Department of Research

Address: ACME Street
Building number/name, street, town

Region: Universityville

Postcode/Zip: AB1 DEF

Country: United Kingdom

Research proposal

Please provide a brief description of why you would like access to each of the selected datasets. You should aim for around 200 words. If you request a dataset, and your proposal does not clearly state why you would like access to that dataset, we may reject your application. For example, if you tick the 'T1 anatomicals' box below, then you need to include a statement explaining why you would like the T1 data.

Current word count: 14

I would like to use the following datasets in order to conduct important research.

Datasets

Filter list..

Variable Name	Description
code1	Imaging Data: Collection of brains scans
code2	Interview Data: Interviews with participants
code3	Imaging Data: Brain ECT patterns
code4	Interview Data: Post TV debrief
code5	Clinical Trials: Bloods tests

Selected

code1
code3
code5

Imaging Data: Collection of brains scans
Imaging Data: Brain ECT patterns
Clinical Trials: Bloods tests

Submit

UNIVERSITY OF CAMBRIDGE

[Study at Cambridge](#)

[About the University](#)

[Research at Cambridge](#)

The system requires the user to complete every field before the form can be submitted. Once the form has been submitted, the user will be given a simple alert confirmation:

The screenshot shows a web browser window for the Cambridge Datasets portal. The URL in the address bar is `psychiatrydrupal/`. The page header includes the University of Cambridge logo and navigation links for **Study at Cambridge**, **About the University**, and **Research at Cambridge**. A search bar and a "Quick links" dropdown are also present. A message box in the center of the page displays a green checkmark icon and the text "Success: Your application has been sent!".

Welcome to the Cambridge University Dataset Portal

This system provides an overview of datasets within the University of Cambridge that are accessible to external researchers. You can apply to access any dataset by filling in a simple web form.

In the event of problems, please email the site administrator at haselwimmer@gmail.com

[View Dataset Collections >>](#)

UNIVERSITY OF CAMBRIDGE

© 2019 University of Cambridge

[University A-Z](#)
[Contact the University](#)
[Accessibility](#)
[Freedom of information](#)
[Terms and conditions](#)

Study at Cambridge

- [Undergraduate](#)
- [Graduate](#)
- [International students](#)
- [Continuing education](#)
- [Executive and professional education](#)
- [Courses in education](#)

About the University

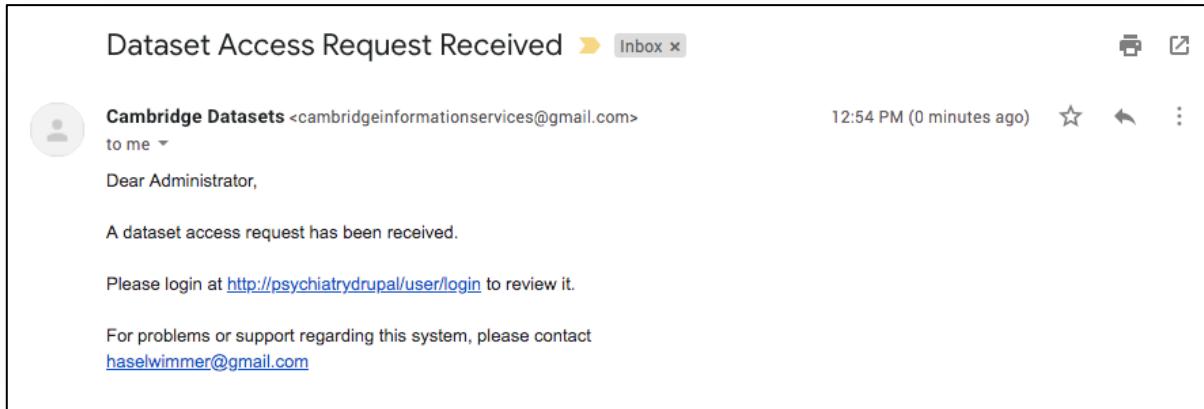
- [How the University and Colleges work](#)
- [Visiting the University](#)
- [Map](#)
- [News](#)
- [Events](#)
- [Jobs](#)
- [Giving to Cambridge](#)

Research at Cambridge

- [News](#)
- [Features](#)
- [Discussion](#)
- [Spotlight on...](#)
- [About research at Cambridge](#)

2.2. Post-Submission

Following a successful application, each “reviewer” and “final reviewer” attached to a dataset collection will receive an email informing them an application requires their review:



When the reviewer/final-reviewer log in to the system, they will be presented with an admin screen:

Standard Reviewer

A standard reviewer will see the following screen:

The screenshot shows a web browser window titled "Pending Applications | Cambridg". The URL is "Not Secure | psychiatrydrupal/applications". The page header includes the University of Cambridge logo, navigation links for "Study at Cambridge", "About the University", "Research at Cambridge", "Quick links", and a search bar. The top right corner shows "Incognito" mode is active. The main content area displays the "Cambridge Datasets" logo and a "Pending Applications" section. A sidebar on the left lists "Pending Applications" and "Dataset Collections". The main content area shows a table titled "Pending Applications" with the following data:

Title	Applicant	Proposal	Datasets	Submitted
Application from Joe Bloggs [2019-07-23 12:54:22]	Joe Bloggs ACME	I would like to conduct an important research project requiring your data.	NSPN: Imaging Data: Collection of brains scans NSPN: Imaging Data: Brain ECT patterns NSPN: Clinical Trials: Bloods tests	23/07/2019 - 12:54

They can click on the pending application in the list to review the application and add an Accept/Reject/Query comment:

The screenshot shows a web browser window with the title "Pending Applications | Cambridge". The URL is "Not Secure | psychiatrydrupal/reviewapplications?page=0". The main content is titled "Pending Applications".

Proposal
Submitted: Tuesday, 23 July, 2019 - 12:54

I would like to conduct an important research project requiring your data.

Applicant

Name: Joe Bloggs
Email: haselwimmer@gmail.com
Position/Organisation: Director, ACME, ACME

Address:
Acme Street
AcmeVille
AB1 CDE
United Kingdom

Requested Datasets

code1	Imaging Data: Collection of brains scans
code3	Imaging Data: Brain ECT patterns
code5	Clinical Trials: Bloods tests

Your Decision / Comment
No comments

Add / Change Your Decision
 Accept Reject Query

Your Comments

Not sure the application is sufficiently strong. How exactly are they going to use the dataset in their research?

Submit

Pending Applications | Cambrix

Not Secure | psychiatrydrupal/reviewapplications?page=0

Incognito

Pending Applications

Proposal

Submitted: Tuesday, 23 July, 2019 - 12:54

I would like to conduct an important research project requiring your data.

Applicant

Name: Joe Bloggs
 Email: haselwimmer@gmail.com
 Position/Organisation: Director, ACME, ACME

Address:
 Acme Street
 AcmeVille
 AB1 CDE
 United Kingdom

Requested Datasets

code1	Imaging Data: Collection of brains scans
code3	Imaging Data: Brain ECT patterns
code5	Clinical Trials: Bloods tests

Your Decision / Comment

Reject Not sure the application is sufficiently strong. How exactly are they going to use the dataset in their research?

Add / Change Your Decision

Accept Reject Query

Your Comments

Submit

The user can overwrite their previous decision/comment by completing the “Your decision” section again and resubmitting the form:

Your Decision / Comment

Accept Actually, it's a very compelling application!

Add / Change Your Decision

Accept Reject Query

Your Comments

Submit

Once a reviewer has added decisions/comments to all pending applications, they click “Logout” to logout.

Final Reviewer

When a “final reviewer” logs in, they see a similar screen to a conventional “reviewer” but with the addition of an “All Applications” link:

The screenshot shows a web browser window for the "Pending Applications | Cambridge" site. The URL is psychiatrydrupal/applications. The page title is "Cambridge Datasets". The top navigation bar includes links for "Study at Cambridge", "About the University", "Research at Cambridge", "Quick links", "Search", and "Logout". A sidebar on the left lists "Pending Applications", "Dataset Collections", and "All Applications". The main content area is titled "Pending Applications" and displays a table of applications. The table columns are "Title", "Applicant", "Proposal", "Datasets", and "Submitted". One application listed is "Application from Joe Bloggs [2019-07-23 12:54:22]" with details: Applicant "Joe Bloggs ACME", Proposal "I would like to conduct an important research project requiring your data.", Datasets "NSPN: Imaging Data: Collection of brains scans", and Submitted "23/07/2019 - 12:54".

A final reviewer can add comments/decisions like a conventional reviewer, but they can also “Reject”, “Approve” or “Processed” the application using one of the buttons on the top of the page:

The screenshot shows the same "Pending Applications | Cambridge" site for a final reviewer. The URL is psychiatrydrupal/reviewapplications?page=0. The page title is "Pending Applications". The top navigation bar and sidebar are identical to the previous screenshot. The main content area now includes three buttons above the application list: "Reject" (red), "Approve" (green), and "Processed" (blue). Below these buttons, the application details are shown: "Proposal" (submitted Tuesday, 23 July, 2019 - 12:54), "Applicant" (Name: Joe Bloggs, Email: haselwimmer@gmail.com), and "Comment" (I would like to conduct an important research project requiring your data.).

Clicking Reject/Approve/Processed will remove the application from the list of pending applications for ALL reviewers:

The screenshot shows a web browser window for the University of Cambridge's Psychiatry Drupal site. The URL is `psychiatrydrupal/reviewapplications?page=0`. The page title is "Pending Applications". The left sidebar shows navigation links: "Dataset Collections", "Pending Applications" (which is highlighted in blue), and "All Applications". The main content area displays the heading "Pending Applications" and the message "No pending applications". The top navigation bar includes the university logo, links for "Study at Cambridge", "About the University", and "Research at Cambridge", and a search bar.

[*Not yet implemented:* Once an application has been “Processed”, an email will be sent to the applicant with details of how they can access the datasets they requested.]

If an application is rejected/approved/processed by mistake, a final reviewer can click “All applications”, select the appropriate application and “Revert” its status to “Submitted”:

The screenshot shows a web browser window for the University of Cambridge's Psychiatry Drupal site. The URL is `psychiatrydrupal/reviewallapplications?page=0`. The page title is "All Applications". The left sidebar shows navigation links: "Dataset Collections", "Pending Applications", and "All Applications" (which is highlighted in blue). The main content area displays a "Status" section with "Approved" and a "Proposal" section containing the text "Submitted: Tuesday, 23 July, 2019 - 12:54" and "I would like to conduct an important research project requiring your data.". Above the proposal text, there are four buttons: "Revert" (gray), "Reject" (red), "Approve" (green), and "Processed" (blue). The top navigation bar includes the university logo, links for "Study at Cambridge", "About the University", and "Research at Cambridge", and a search bar.

This will cause the reverted application to reappear in the list of all “Pending Applications”.

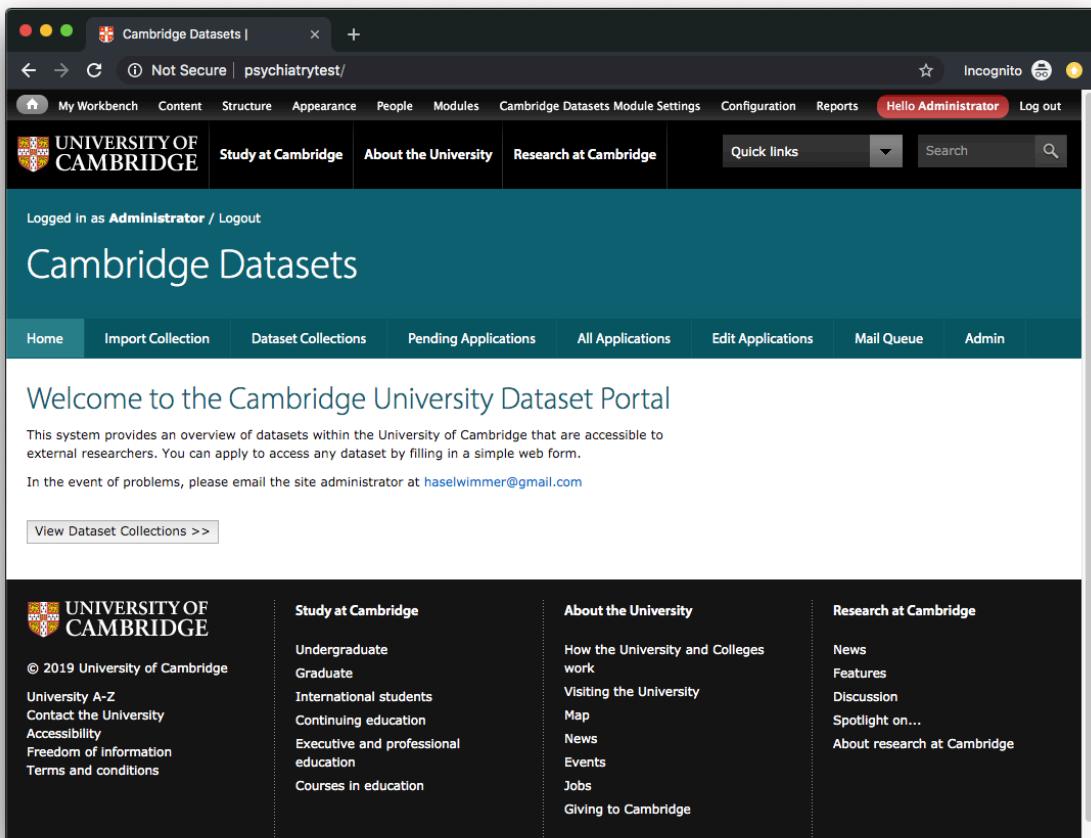
3. Setting Up Application

3.1. Installing Software

To install the software on your webserver, follow the instructions at:

https://github.com/SH801/cambridge_datasets_application

Once you have successfully installed your software, you should see the following screen:



This is the view presented to all users with “Administrator” permissions.

3.2. Configuring Software

Set up your SMTP mail server settings, your applications backup folder and your server “cron job” using the instructions at:

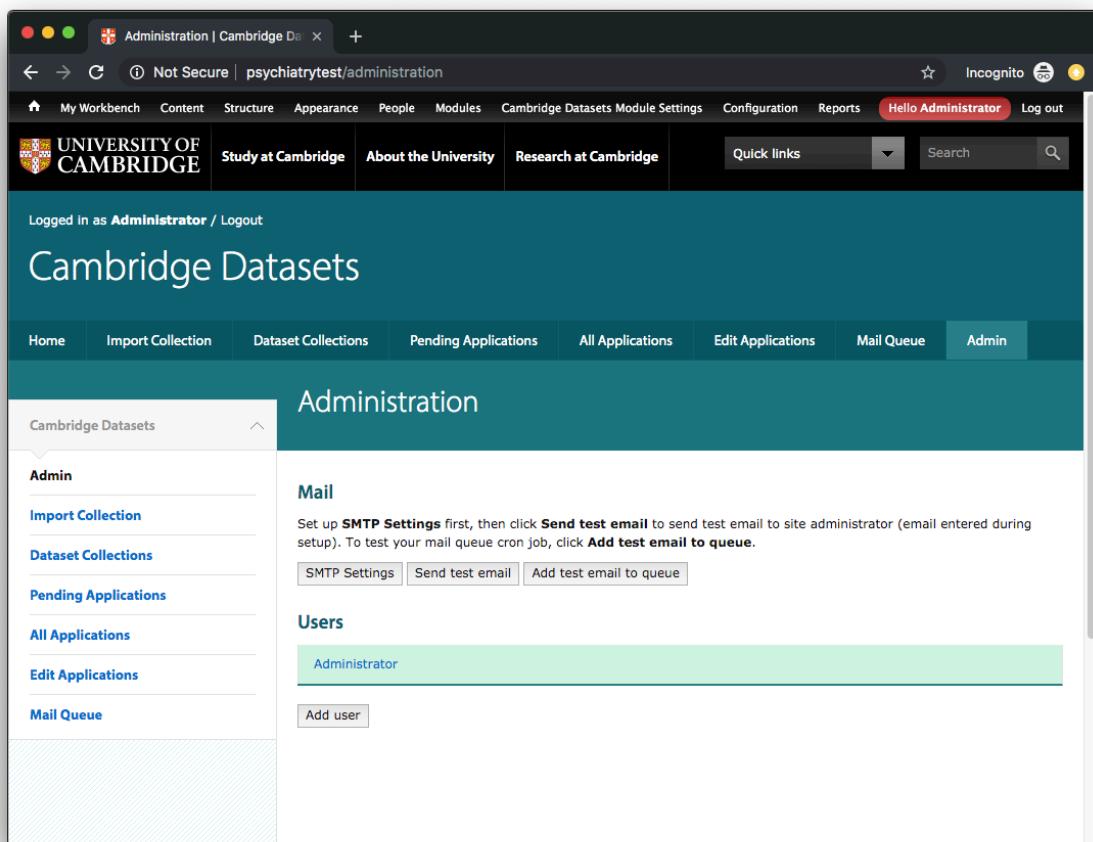
https://github.com/SH801/cambridge_datasets_application

3.3. Setting Up Software for First Use

1. Create reviewers

Before you import any dataset collections, you will need to create at least one “reviewer” and one “final reviewer” (they can be the same person).

To add users to the system, click the “Admin” tab while logged in as “Administrator”:



Click on “Add user”:

The screenshot shows a web browser window with the URL <https://psychiatrytest/administration#overlay=admin/people/create>. The page title is "People | Cambridge Datasets". The top navigation bar includes links for My Workbench, Content, Structure, Appearance, People, Modules, Cambridge Datasets Module Settings, Configuration, Reports, Hello Administrator, and Log out. Below the navigation is a header with the University of Cambridge logo and links for Study at Cambridge, About the University, and Research at Cambridge. A "Permissions" tab is selected in the top right. The main content area is titled "Home > Administration > People". It displays a form for creating a new user account. The fields filled in are:

- Name ***: Reviewer1
- Username ***: reviewer1
- E-mail address ***: shaselwimmer@cantab.net
- Password ***: (redacted)
- Confirm password ***: (redacted)
- Status**: Active (radio button selected)
- Roles**:
 - authenticated user
 - administrator
 - reviewer (checkbox selected)
 - finalreviewer
- Notify user of new account

A "Password strength" bar indicates "Fair". Below the password fields is a link to "To make your password stronger: Add uppercase letters, Add numbers, Add punctuation". At the bottom of the form is a "Create new account" button.

Click the “reviewer” checkbox for each standard reviewer and the “finalreviewer” checkbox for each final reviewer.

You should end up with a list of reviewers/final-reviewers:

The screenshot shows the Cambridge Datasets Administration interface. At the top, there's a navigation bar with links for My Workbench, Content, Structure, Appearance, People, Modules, Cambridge Datasets Module Settings, Configuration, Reports, and a red "Hello Administrator" button. Below the navigation is a header with the University of Cambridge logo and links for Study at Cambridge, About the University, Research at Cambridge, Quick links, and a search bar.

In the main content area, it says "Logged in as Administrator / Logout". The title "Cambridge Datasets" is displayed above a teal navigation bar with tabs for Home, Import Collection, Dataset Collections, Pending Applications, All Applications, Edit Applications, Mail Queue, and Admin (which is selected).

The main content area has a title "Administration" and a sidebar titled "Admin" containing links for Import Collection, Dataset Collections, Pending Applications, All Applications, Edit Applications, and Mail Queue. The main panel is titled "Mail" and contains instructions: "Set up **SMTP Settings** first, then click **Send test email** to send test email to site administrator (email entered during setup). To test your mail queue cron job, click **Add test email to queue**". It features three buttons: "SMTP Settings", "Send test email", and "Add test email to queue". Below this is a section titled "Users" listing "FinalReviewer1", "Reviewer1", and "Administrator". There is also a "Add user" button.

Once you have a reviewer and a final reviewer, you can proceed to importing your first dataset collection:

Importing a Dataset Collection

While still logged in as “Administrator”, click on “Import Collection” to display the import page:

The screenshot shows a web browser window titled "Import Dataset Collection | Cambridge Datasets". The URL is "Not Secure | psychiatrytest/cambridge_datasets/import". The top navigation bar includes links for My Workbench, Content, Structure, Appearance, People, Modules, Cambridge Datasets Module Settings, Configuration, Reports, "Hello Administrator" (highlighted in red), and Log out. Below the navigation is a header with the University of Cambridge logo and links for Study at Cambridge, About the University, Research at Cambridge, Quick links, and Search. A message "Logged in as Administrator / Logout" is displayed. The main content area has a teal header "Import Dataset Collection". On the left is a sidebar with "Import Collection" selected and other options: Dataset Collections, Pending Applications, All Applications, Edit Applications, Mail Queue, and Admin. The main form area contains instructions to import datasets from a CSV file, a "Collection title" input field, a "CSV file" section with a "Choose file" button (showing "No file chosen"), a note about maximum upload size (2 MB), and an "Import >>" button.

Enter the name of the dataset collection in the **Collection title** field then select a “comma-separated” (CSV) file by clicking on **Choose file**; for information about the precise specification of the CSV file, see “CSV Import File” section below. Click “Import >>” to start the import procedure:

The screenshot shows the same web browser window as the previous one, but now with a success message overlay. The message reads: "Success: Import of nspn.csv complete. 5 row(s) imported". The rest of the interface is identical to the first screenshot, including the sidebar and the import form.

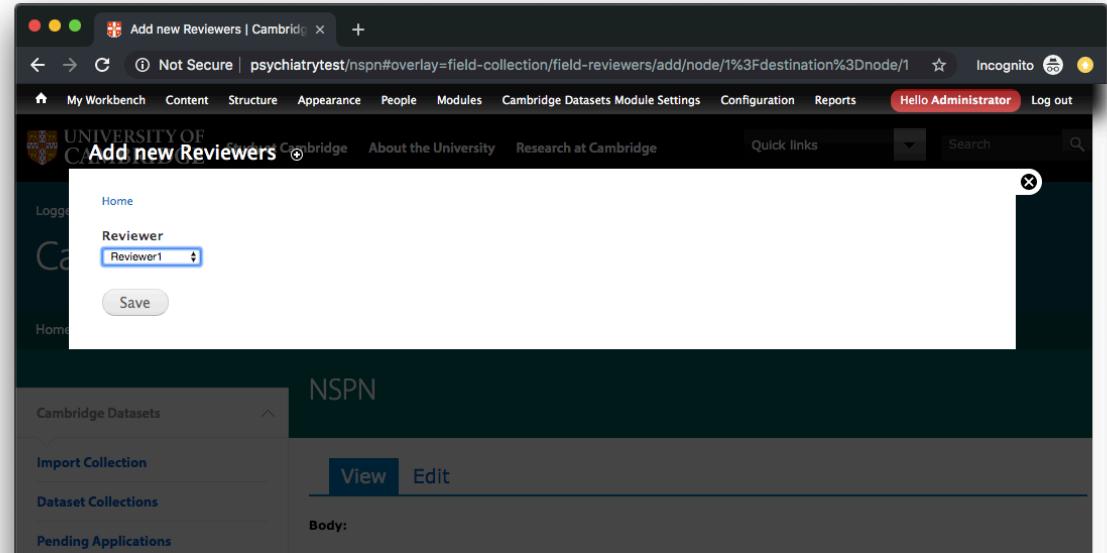
To view the imported dataset collection, click on the “Dataset Collections” link:

The screenshot shows the 'Dataset Collections' page of the Cambridge Datasets system. The top navigation bar includes links for My Workbench, Content, Structure, Appearance, People, Modules, Cambridge Datasets Module Settings, Configuration, Reports, and a red 'Hello Administrator' button. A search bar is also present. The main content area displays a table titled 'Dataset Collections' with columns for Title, Overview, and Apply. One row is visible for 'NSPN'. On the left, a sidebar menu lists 'Import Collection', 'Dataset Collections', 'Pending Applications', and other options like 'About the University'.

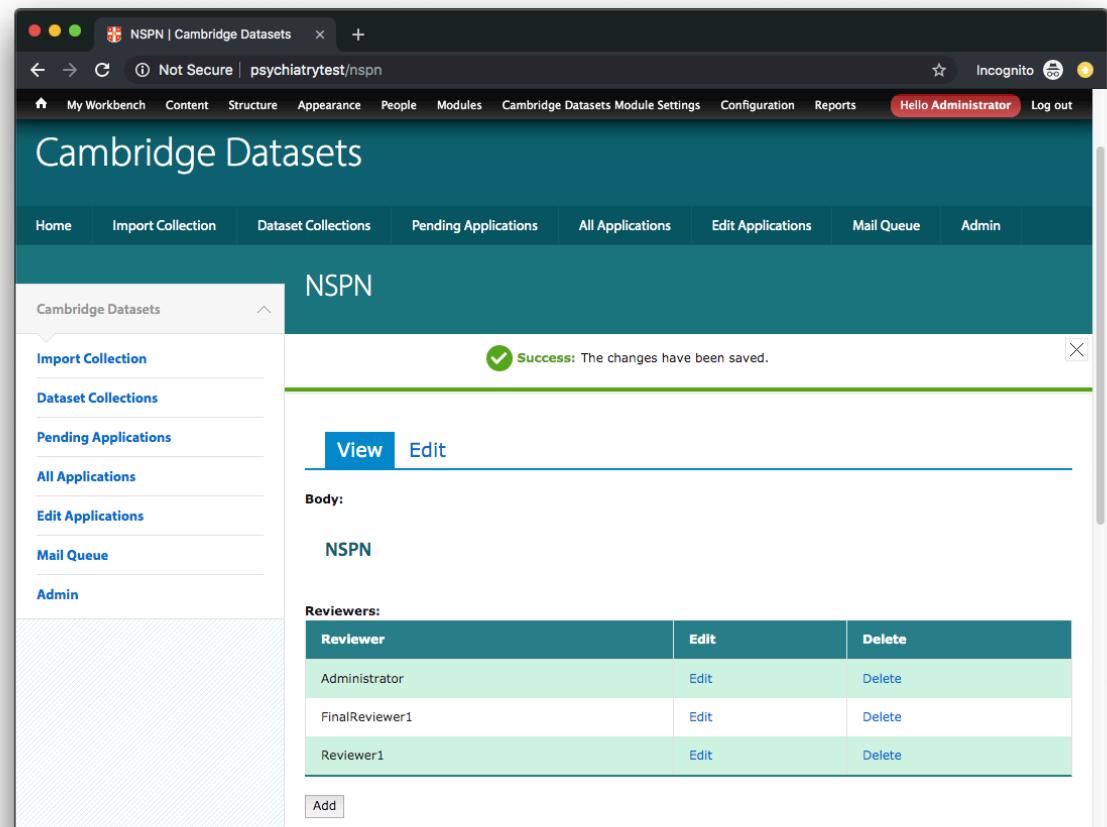
Once a dataset collection has been imported, you can add reviewers and final reviewers to it. Click on the “edit” (pencil) icon to the left of the dataset collection title to edit the dataset collection:

The screenshot shows the 'NSPN' dataset collection edit page. The top navigation bar and sidebar are identical to the previous screenshot. The main content area shows the 'Edit' tab selected for the 'NSPN' collection. It includes sections for 'Body:' containing 'NSPN', 'Reviewers:' with an 'Add' link, and 'Datasets:' with a table listing three datasets: 'code1' (Imaging Data: Collection of brains scans), 'code2' (Interview Data: Interviews with participants), and 'code3' (Imaging Data: Brain ECT patterns). Each dataset row has 'Edit' and 'Delete' buttons.

To add reviewers/final-reviewers, click on the “Add” link below “Reviewers”:



Add as many reviewers/final-reviewers as you need to, but be careful not to duplicate entries:



It is recommended that you add in the main “Administrator” user so they can see applications in the “Pending applications” screen.

Description of Additional Tabs available to Administrator

In addition to the “Import Collection”, “Dataset Collections” and “Admin” tabs covered above, the following tabs/functions are available to an administrator:

- **Pending Applications**

Show a list of all applications the current user has been delegated that have the status “Submitted”.

- **All Applications**

Show a list of all applications the current user has been delegated, regardless of status. This may be useful if an application has mistakenly been Rejected/Approved and has disappeared from the “Pending Applications” list.

- **Edit Applications**

Show a list of all applications across the entire system. This may be useful if an application has not been specifically delegated to the administrator but needs to be edited.

- **Mail Queue**

Shows a list of mail messages with their status. You can manually force sending of unsent messages by clicking on the “Process message queue” button:

The screenshot shows the 'Mail Queue' page of the Cambridge Datasets system. At the top, there's a navigation bar with links for My Workbench, Content, Structure, Appearance, People, Modules, Cambridge Datasets Module Settings, Configuration, Reports, Hello Administrator, and Log out. Below the navigation is a header with the University of Cambridge logo and links for Study at Cambridge, About the University, and Research at Cambridge. A search bar and quick links are also present. The main content area is titled 'Cambridge Datasets' and shows a 'Mail Queue' section. On the left, there's a sidebar with links for Home, Import Collection, Dataset Collections, Pending Applications, All Applications, Edit Applications, and Admin. The 'Edit Applications' link is highlighted. The main 'Mail Queue' area has a 'Process message queue' button. It includes filters for Email and Sent status, and a table showing five messages. The table columns are Subject, Email, Sent, Type, and Updated date. The messages are as follows:

Subject	Email	Sent	Type	Updated date
Dataset Access Enabled	haselwimmer@gmail.com	Unsent	Specific message	Tuesday, 23 July, 2019 - 16:00
Dataset Access Enabled	haselwimmer@gmail.com	Unsent	Specific message	Tuesday, 23 July, 2019 - 15:58
Dataset Access Request Received	shaselwimmer@cantab.net	Unsent	Application received notification	Tuesday, 23 July, 2019 - 15:54
Dataset Access Request Received	sh801@cam.ac.uk	Unsent	Application received notification	Tuesday, 23 July, 2019 - 15:54

3.4. CSV Import File

The CSV file should consist of multiple lines of three comma-separated fields:

- **Code**
The code of the specific dataset within the dataset collection
- **Title**
The title of the specific dataset within the dataset collection
- **Location**
The location of the specific dataset (*not currently used – may be used for automated access in future*)

As the file is a comma-separated file, none of the text fields above should contain commas (,). The CSV should also not include a “table header”, ie. the first line should be a line of data not a list of fields.

The contents of a sample CSV file is as follows:

```
code1,Imaging Data: Collection of brains scans,/imaging/brain1  
code2,Interview Data: Interviews with participants,/interview/participants1  
code3,Imaging Data: Brain ECT patterns,/imaging/ect1  
code4,Interview Data: Post TV debrief,/interview/tvdebrief1  
code5,Clinical Trials: Bloods tests,/clinical/blood1
```

4. Technical Overview

4.1. Drupal Content Types

Content Type	Application
Description	Stores every application the external user submits
Extra Fields (redundant fields not shown)	Title Collection Status First Name Last Name Email Position Institution Department Address Region Postcode Country Proposal Datasets [field collection*] Reviewers [field collection*] Reviews [field collection*]

Content Type	Collection
Description	Stores a collection of datasets
Extra Fields (redundant fields not shown)	Title Body (used in “Dataset Overview” view) Terms & Conditions Text before main application form Text before list of datasets Reviewers [field collection*] Datasets [field collection*]

* **field_collection** and **field_collection_views** Drupal modules are used to manage many-to-many relationships including their display within admin screens and views.

Content Type	Dataset
Description	Stores information about the specific datasets within each dataset collection
Extra Fields (redundant fields not shown)	<p>Title (= [Collection title]: [Dataset Title])</p> <p>Code</p> <p>Dataset Title (Original dataset title from CSV file)</p> <p>Location</p> <p>The “Title” field is designed to distinguish datasets with similar “Dataset titles” across different collections. When a dataset is imported, the “Title” field is constructed from the title of the dataset collection (input in the “Import Dataset” form) and the title of the specific dataset as defined in the CSV import file. This helps when selecting datasets during dataset collection editing, eg. when you need to distinguish between “NSPN2018: Post-survey interviews” and “NSPN2019: Post-survey interviews”.</p>

Content Type	Mail
Description	Stores queued mail
Extra Fields (redundant fields not shown)	<p>Type (“0” = Specific email, “1” = Application received notification)</p> <p>Sent</p> <p>Email</p> <p>Title</p> <p>Body</p> <p>The “Type” field is designed to avoid deluging reviewers with notification emails. If mail type = “0”, a new entry is added to the mail queue for every new email request of that type (standard behaviour). If a new email request of type “1” is received (notification behaviour), all existing Type 1 messages for that user are deleted before a new queue item is added. This ensures that if multiple “Application received” notifications are received since the last time the cron job was run, only one email will be sent to the outbound user when the cron job is next run (rather than one for every notification).</p>

4.2. Drupal Views

View Administration

Description Administration interface to allow setting of SMTP parameters, testing of email, and editing of users

Access Administrator

View All Applications

Description List of applications that have been delegated to logged-in user

Access Administrator
Final Reviewer

View Collection Overview

Description Overview of specific dataset collection

Access Any user

View Collections

Description List of all dataset collections

Access Any user

View	Edit Applications
Description	Full list of all applications, regardless of whether logged-in user has been given delegated access
Access	Administrator

View	Field collection view – Datasets
Description	Sublist of datasets with edit/delete functionality
Access	<i>Dependent on inclusion in parent view</i>

View	Field collection view - Datasets (Read only)
Description	Sublist of datasets with no edit/delete functionality
Access	<i>Dependent on inclusion in parent view</i>

View	Field collection view – Reviewers
Description	Sublist of reviewers with edit/delete functionality
Access	<i>Dependent on inclusion in parent view</i>

View	Field collection view – Reviews
Description	Sublist of reviews with edit/delete functionality
Access	<i>Dependent on inclusion in parent view</i>

View Field collection view - Reviews (Read only)

Description Sublist of reviews with no edit/delete functionality

Access *Dependent on inclusion in parent view*

View Mail Queue

Description List of items in mail queue

Access Administrator

View Pending Applications

Description List of submitted applications the user has access to

Access Reviewer
Final Reviewer
Administrator

View Review All Applications

Description Review all applications the user has access to

Access Final Reviewer
Administrator

View Review Pending Applications

Description Review all submitted applications the user has access to

Access Reviewer
Final Reviewer
Administrator

4.3. PHP Code

The majority of the PHP code used in the application is located in the **cambridge_datasets** module, specifically:

`drupal/profiles/cambridge_datasets_application/modules/features/cambridge_datasets/cambridge_datasets.module`

There are also snippets of PHP code used in the following Drupal views:

- Collections
- Review All Applications
- Review Pending Applications

4.4 Drupal Tutorial

To understand more about Drupal 7, go to <https://www.drupal.org/docs/7>