

Cambridge Datasets Application

Documentation

Version 1.0

haselwimmer@gmail.com

3rd August 2019

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1. Overview

The **Cambridge Datasets Application** allows external users to submit a formal request to access one or more Cambridge University datasets. The Datasets Application forwards the request to internal reviewers who then submit their comments via the application. A final reviewer approves or rejects the user's request within the application, based on the comments of previous reviewers.

If a request 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 to the datasets. While there is significant scope to automate this final stage of the process, no automation has been implemented in this version of the application; any automation code 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, rather than 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>

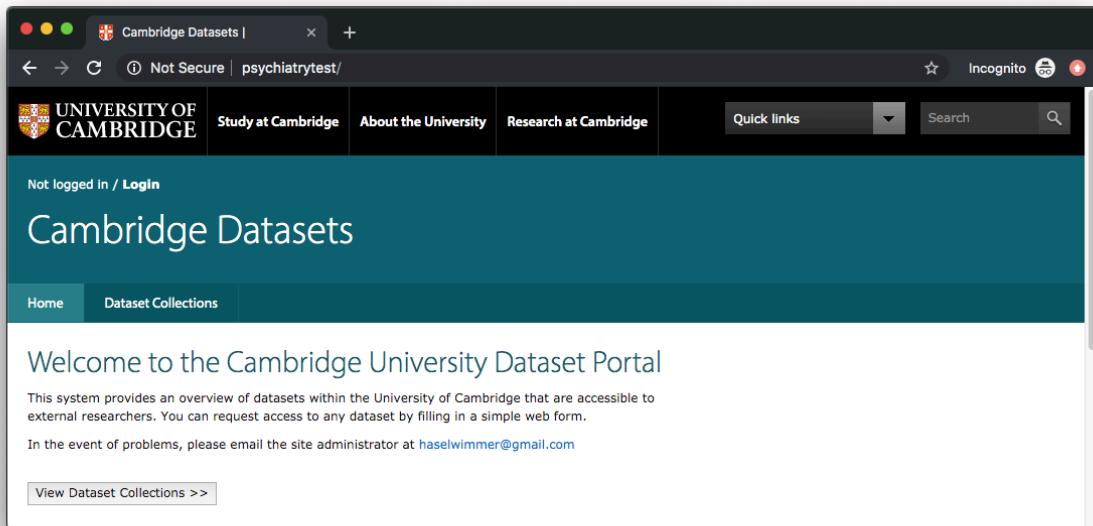
The specific components of the Drupal application are as follows:

- **1. Drupal Content Types and Views:** A variety of Drupal *content types* were created within Drupal to manage different types of data, eg. "Dataset" and "Request". A range of Drupal *views* were used to display the data in specific ways, eg. "Edit requests".
- **2. Drupal Module:** The Drupal PHP module **cambridge_datasets** provides bespoke functionality not possible through Drupal's 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 systems such as "Amazon S3" to ensure successful applicants are given access to datasets in an automated way.

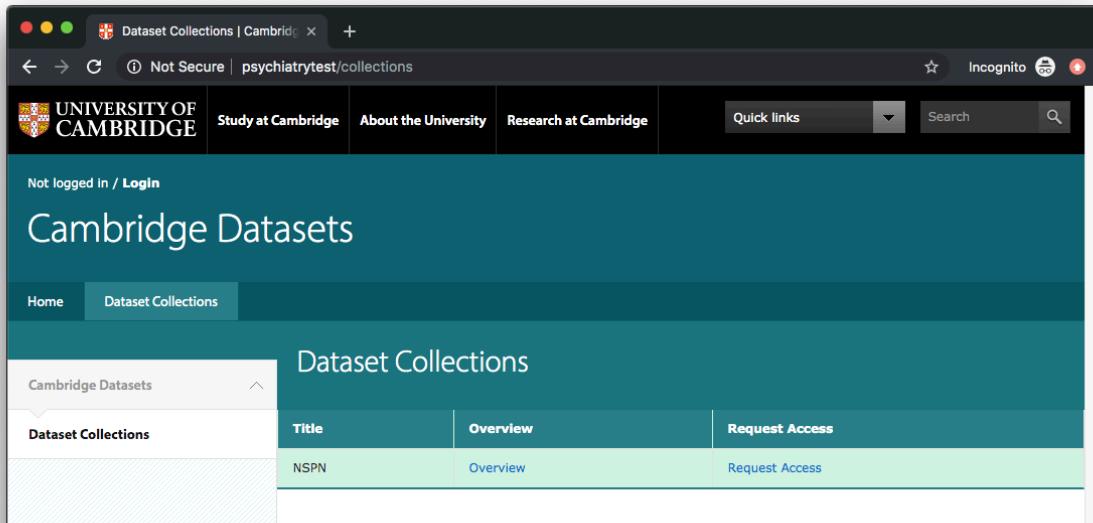
2. Using Application - Overview

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:

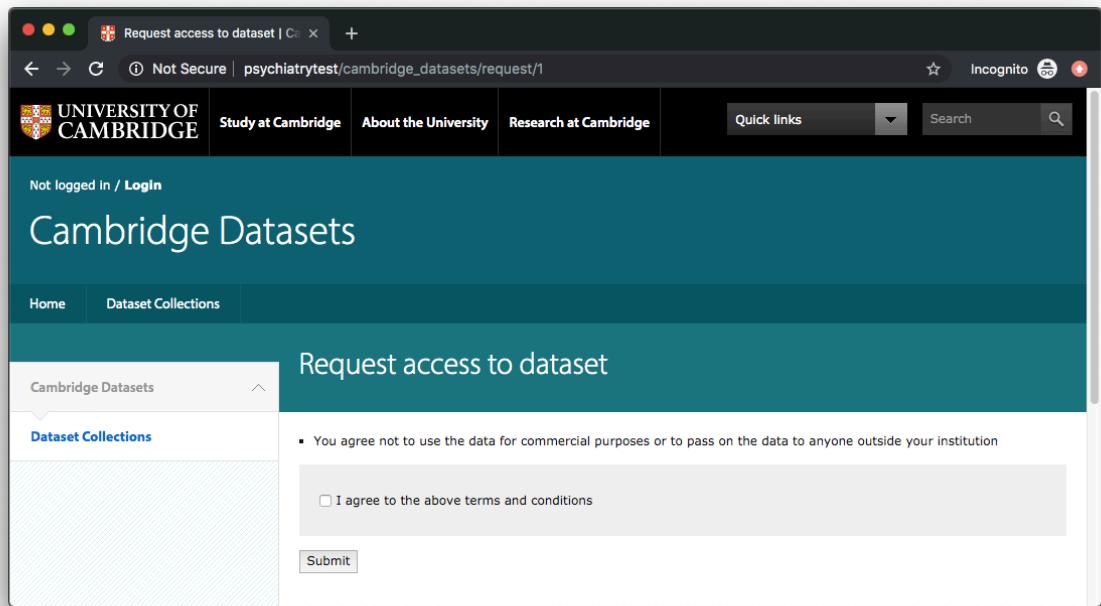
The screenshot shows a web browser window titled "Dataset Collection Overview". The URL is "Not Secure | psychiatrytest/overview/1". The header includes the University of Cambridge logo and navigation links for "Study at Cambridge", "About the University", "Research at Cambridge", "Quick links", and a search bar. Below the header, it says "Not logged in / Login" and "Cambridge Datasets". A secondary navigation bar has "Home" and "Dataset Collections" tabs, with "Dataset Collections" being active. The main content area is titled "Dataset Collection Overview" and contains a sidebar labeled "Cambridge Datasets" with a "Dataset Collections" section. The main content area is titled "NSPN" and describes "A list of NSPN datasets". It has a section titled "Datasets" with two input fields for "Code" and "Title" and an "Apply" button. Below is a table listing 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:

This screenshot shows the same interface after applying a filter. In the "Title" input field, the user has typed "TV". Only one dataset, "code4" (Interview Data: Post TV debrief), is now visible in the list.

The user can request access to one or more datasets within the dataset collection by clicking “Request access to datasets”. 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 a data request form where they can fill in their details, describe their research proposal and select their desired datasets:

The screenshot shows a web-based application titled "Request access to dataset" for "Cambridge Datasets".

Dataset Collections

Form fields for personal information:

- First Name: Joe
- Last Name: Bloggs
- Email: joe@bloggs.com
- Academic Position: Director
- Institution: ACME University
- Department: Department of Research

Address:

Building number/name, street, town: ACME Street

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

Buttons

Submit

Footer

UNIVERSITY OF CAMBRIDGE

Study at Cambridge

About the University

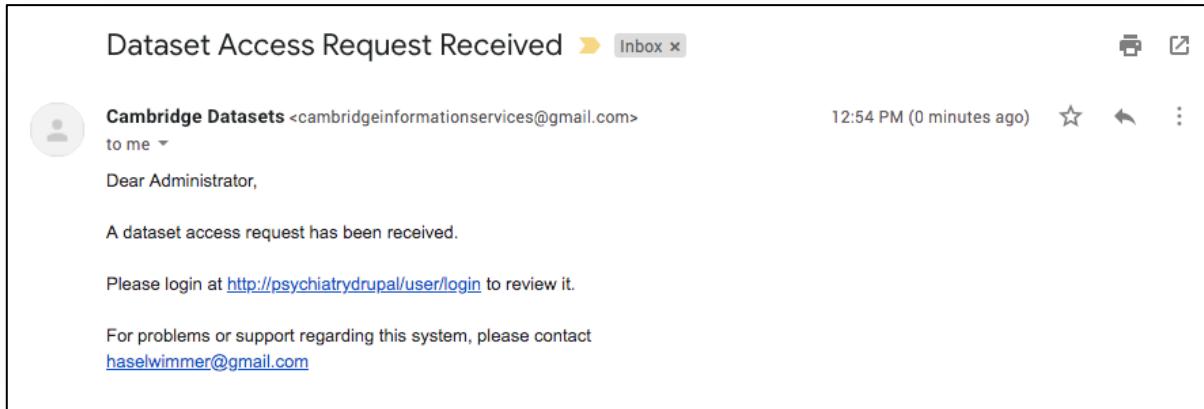
Research at Cambridge

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' website. The URL in the address bar is 'Not Secure | 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 'Quick links' dropdown and a search bar are also present. A message 'Not logged in / Login' is displayed above the main content area. The main title 'Cambridge Datasets' is centered. Below it, there are two tabs: 'Home' (selected) and 'Dataset Collections'. A green success message box is overlaid on the page, containing the text 'Success: Your application has been sent!' with a checkmark icon. The main content area features a heading 'Welcome to the Cambridge University Dataset Portal' and a brief description of the system's purpose. At the bottom of the page is a dark footer section containing the University of Cambridge logo, copyright information (© 2019 University of Cambridge), and links to various university services like 'Study at Cambridge', 'About the University', and 'Research at Cambridge'.

2.2. Post-Submission

Following a successful request, each reviewer/final-reviewer attached to a dataset collection will receive an email informing them a request has been received that requires 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 the "Pending Requests" page of the Cambridge Datasets system. The page title is "Pending Requests". A sidebar on the left lists "Pending Requests" and "Dataset Collections". The main content area displays a table of pending requests:

Title	Applicant	Proposal	Datasets	Submitted
Request from Joe Bloggs [2019-07-24 11:56:45]	Joe Bloggs ACME University	I would like to use the following datasets in order to conduct important research.	NSPN: Imaging Data: Collection of brains scans NSPN: Imaging Data: Brain ECT patterns NSPN: Clinical Trials: Bloods tests	24/07/2019 - 11:56

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

Pending Requests

Proposal
Submitted: Wednesday, 24 July, 2019 - 11:56

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

Applicant

Name: Joe Bloggs
Email: haselwimmer@gmail.com
Position/Organisation: Director, Department of Research, ACME University
Address:
ACME Street
UniversityVille
AB1 DEF
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

Submit

Pending Requests | Cambridge

Not Secure | psychiatrytest/reviewrequests?page=0

Pending Requests

Proposal

Submitted: Wednesday, 24 July, 2019 - 11:56

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

Applicant

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

Address:
 ACME Street
 UniversityVille
 AB1 DEF
 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.
--------	--------------------------------------------------

Add / Change Your Decision

Accept Reject Query

Your Comments

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 requests, 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 Requests” link:

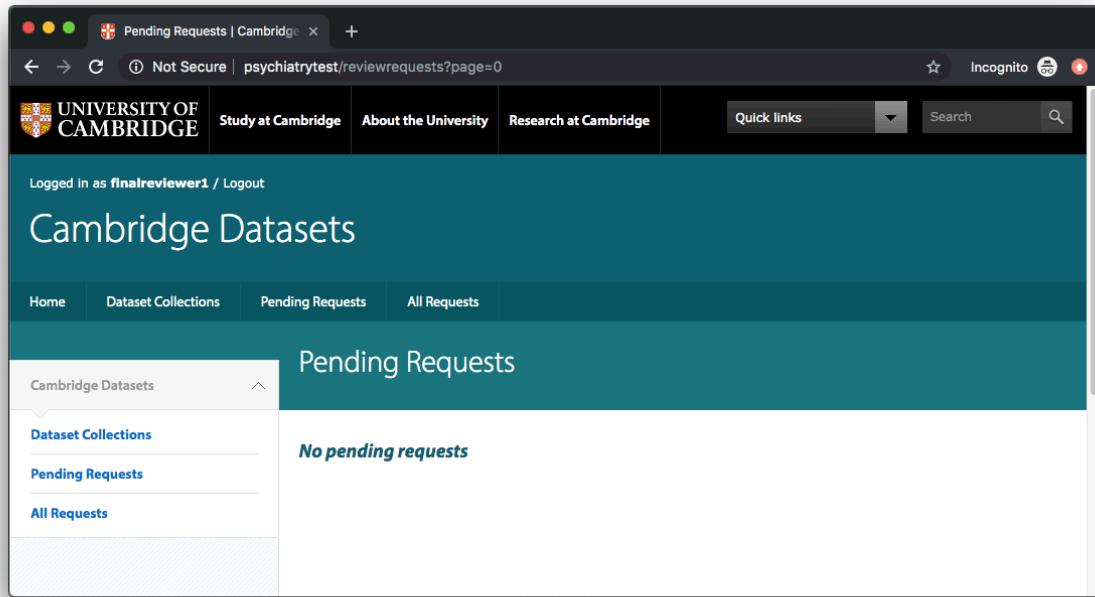
The screenshot shows a web browser window for the University of Cambridge datasets. The URL is `psychiatrytest/requests`. The top navigation bar includes links for the University logo, Study at Cambridge, About the University, Research at Cambridge, Quick links, Search, and Logout. The main content area is titled "Cambridge Datasets". A sidebar on the left lists "Pending Requests", "Dataset Collections", and "All Requests". The main content area is titled "Pending Requests" and contains a table with one row of data. The table columns are Title, Applicant, Proposal, Datasets, and Submitted. The data row shows a request from "Joe Bloggs [2019-07-24 11:56:45]" to use datasets from ACME University. The proposal states: "I would like to use the following datasets in order to conduct important research." The datasets listed are NSPN: Imaging Data: Collection of brains scans, NSPN: Imaging Data: Brain ECT patterns, NSPN: Clinical Trials: Bloods tests. The request was submitted on 24/07/2019 at 11:56.

Title	Applicant	Proposal	Datasets	Submitted
Request from Joe Bloggs [2019-07-24 11:56:45]	Joe Bloggs ACME University	I would like to use the following datasets in order to conduct important research.	NSPN: Imaging Data: Collection of brains scans NSPN: Imaging Data: Brain ECT patterns NSPN: Clinical Trials: Bloods tests	24/07/2019 - 11:56

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

The screenshot shows the same web browser window as the previous one, but now the "Pending Requests" table row has three buttons above it: "Reject" (red), "Approve" (green), and "Processed" (blue). Below the table, the "Proposal" and "Applicant" sections are visible, showing the same information as the previous screenshot.

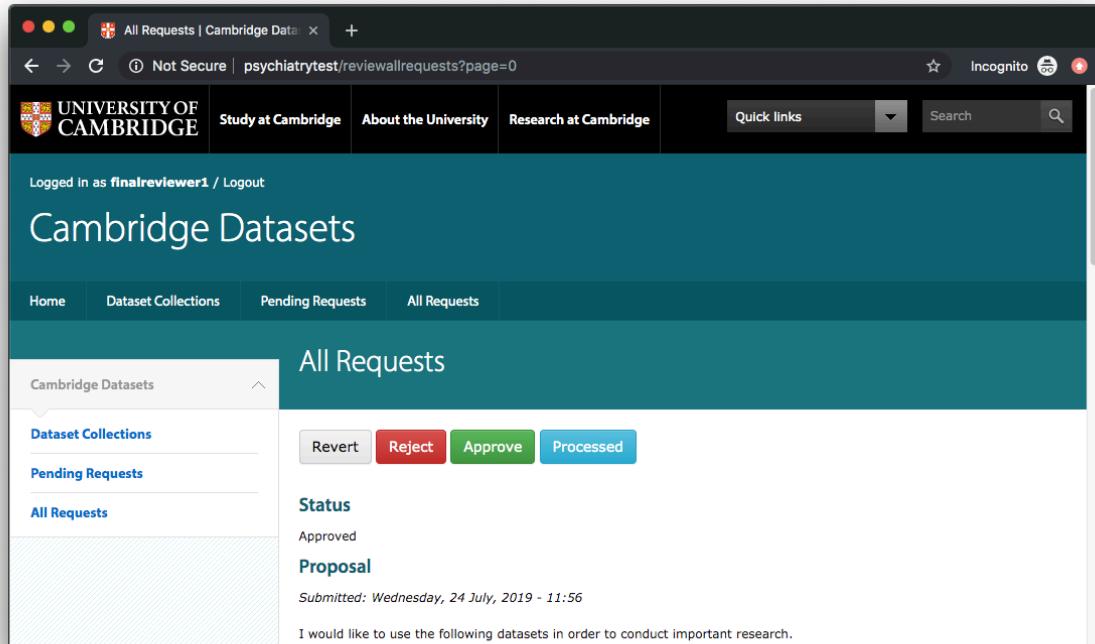
Clicking Reject/Approve/Processed will remove the request from the list of pending requests for ALL reviewers:



The screenshot shows a web browser window for 'Pending Requests | Cambridge'. The URL is 'Not Secure | psychiatrytest/reviewrequests?page=0'. The page title is 'Cambridge Datasets'. The top navigation bar includes links for 'Study at Cambridge', 'About the University', 'Research at Cambridge', 'Quick links', and a search bar. A sidebar on the left shows navigation links: 'Dataset Collections' (selected), 'Pending Requests', and 'All Requests'. The main content area is titled 'Pending Requests' and displays the message 'No pending requests'.

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

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



The screenshot shows a web browser window for 'All Requests | Cambridge Data'. The URL is 'Not Secure | psychiatrytest/reviewallrequests?page=0'. The page title is 'Cambridge Datasets'. The top navigation bar includes links for 'Study at Cambridge', 'About the University', 'Research at Cambridge', 'Quick links', and a search bar. A sidebar on the left shows navigation links: 'Dataset Collections', 'Pending Requests', and 'All Requests' (selected). The main content area is titled 'All Requests' and shows a single request entry. At the top of this entry are buttons for 'Revert' (gray), 'Reject' (red), 'Approve' (green), and 'Processed' (blue). Below the buttons, the status is listed as 'Approved'. Under 'Proposal', it says 'Submitted: Wednesday, 24 July, 2019 - 11:56'. The proposal text reads: 'I would like to use the following datasets in order to conduct important research.'

This will cause the reverted request to reappear in the list of all “Pending Requests”.

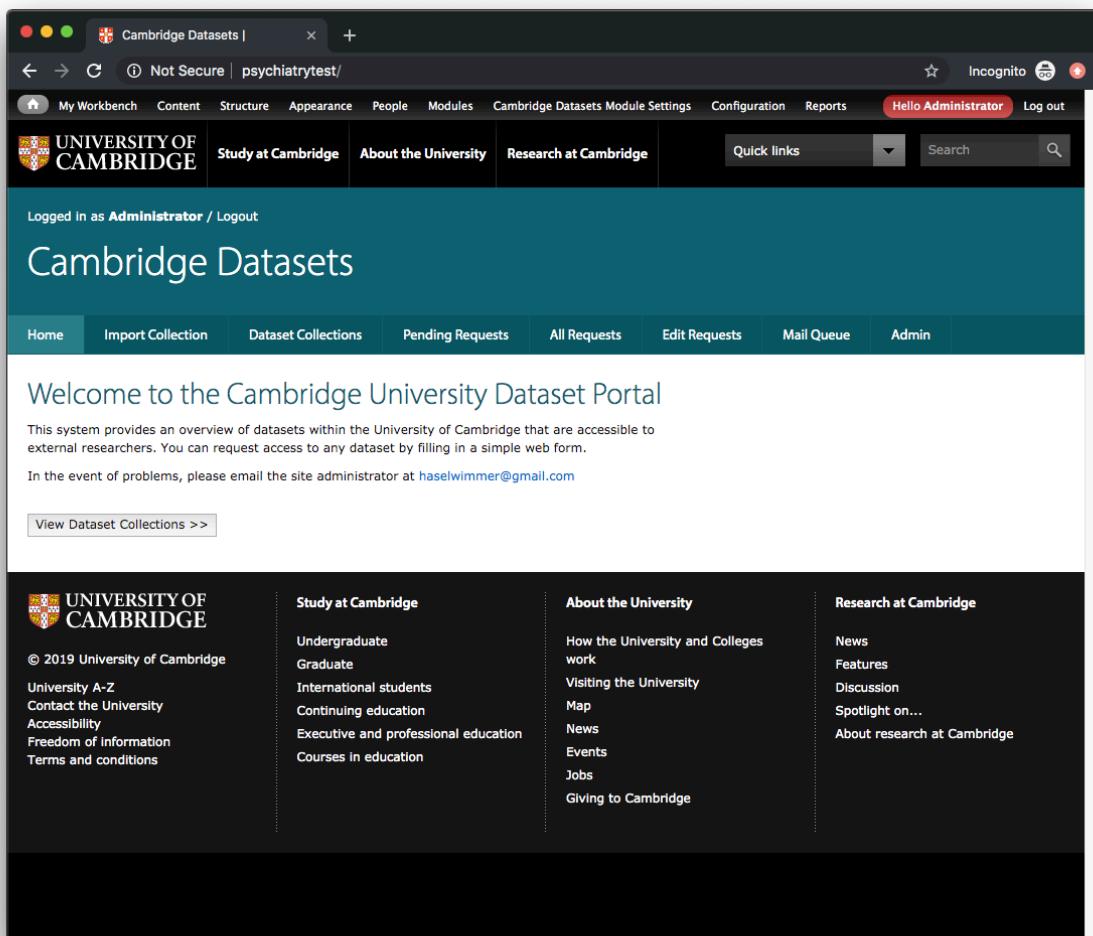
3. Setting Up Application

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 requests 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”:

The screenshot shows the Cambridge Datasets Administration interface. At the top, there is a navigation bar with links for My Workbench, Content, Structure, Appearance, People, Modules, Cambridge Datasets Module Settings, Configuration, Reports, Hello Administrator (which is highlighted in red), and Log out. Below the navigation bar, there is a header with the University of Cambridge logo and links for Study at Cambridge, About the University, Research at Cambridge, Quick links, Search, and a magnifying glass icon.

In the main content area, it says "Logged in as Administrator / Logout". The title "Cambridge Datasets" is displayed. Below the title, there is a horizontal navigation bar with tabs: Home, Import Collection, Dataset Collections, Pending Requests, All Requests, Edit Requests, Mail Queue, and Admin (which is highlighted in blue). On the left side, there is a sidebar with a tree view under "Cambridge Datasets". The "Admin" node is expanded, showing sub-options: Import Collection, Dataset Collections, Pending Requests, All Requests, Edit Requests, and Mail Queue. Under "Import Collection", there is a link to "Dataset Collections". Under "Pending Requests", there is a link to "All Requests". Under "Edit Requests", there is a link to "Mail Queue".

The main content area has a section titled "Administration" with a sub-section titled "Mail". It 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**". Below these instructions are three buttons: "SMTP Settings", "Send test email", and "Add test email to queue".

There is also a section titled "Users" with a table:

User	Roles
Administrator	administrator

At the bottom of the "Users" section, there is a button labeled "Add user".

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
- META TAGS**: (empty input field)

A "Password strength" bar indicates "Fair". A note below the password fields says: "To make your password stronger:

- Add uppercase letters
- Add numbers
- Add punctuation

". A note above the status section says: "Provide a password for the new account in both fields." A note above the roles section says: "To make your password stronger:

- Add uppercase letters
- Add numbers
- Add punctuation

".

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 'Administration' section of the Cambridge Datasets web application. At the top, there's a navigation bar with links like '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', 'Research at Cambridge', 'Quick links', 'Search', and a magnifying glass icon.

The main content area has a teal header 'Cambridge Datasets' and a sub-header 'Administration'. On the left, there's a sidebar with a tree view under 'Cambridge Datasets' containing nodes for 'Admin', 'Import Collection', 'Dataset Collections', 'Pending Requests', 'All Requests', 'Edit Requests', and 'Mail Queue'. The 'Admin' node is expanded, showing three sub-options: 'Import Collection', 'Dataset Collections', and 'Pending Requests'. The 'Mail' section contains instructions to set up SMTP settings and links for 'SMTP Settings', 'Send test email', and 'Add test email to queue'. The 'Users' section displays a table with three rows:

User	Roles
FinalReviewer1	finalreviewer
Reviewer1	reviewer
Administrator	administrator

A small 'Add user' button is located at the bottom of the users table.

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 the 'Import Dataset Collection' page of the Cambridge Datasets module. 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. The main header features the University of Cambridge logo and navigation links for Study at Cambridge, About the University, Research at Cambridge, Quick links, Search, and a magnifying glass icon. Below the header, a message 'Logged in as Administrator / Logout' is displayed. The main content area has a teal header 'Import Dataset Collection'. On the left, a sidebar menu lists 'Import Collection', 'Dataset Collections', 'Pending Requests', 'All Requests', 'Edit Requests', 'Mail Queue', and 'Admin'. The main panel contains instructions: 'Import a list of datasets from a CSV file.', 'Ensure the file is comma-separated and not tab-separated - if necessary open in Excel and do Save as', 'Collection title' (with an input field), 'CSV file' (with a 'Choose file' button showing 'No file chosen'), and 'Due to server restrictions, the maximum upload file size is 2 MB. Files that exceed this size will be disregarded.' A 'Import >>' button is at the bottom.

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 'Import Dataset Collection' page after a successful import. A green success message box appears in the center of the main panel, stating 'Success: Import of nsnp.csv complete. 5 row(s) imported'. The rest of the page structure remains the same, including the sidebar menu and the import form fields.

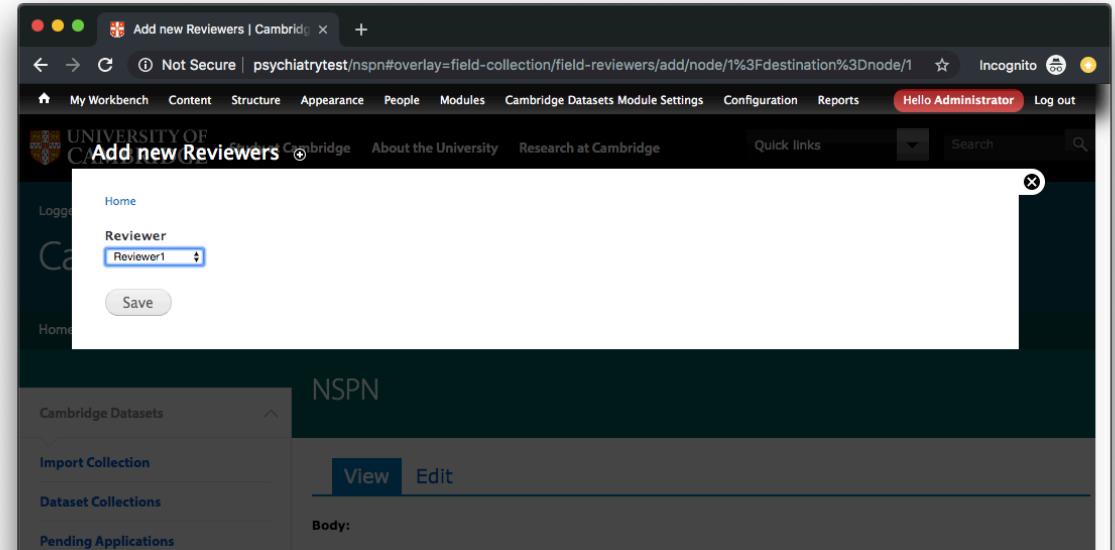
To view the imported dataset collection, click on the “Dataset Collections” link:

The screenshot shows the Cambridge Datasets interface. At the top, there's a navigation bar with links like My Workbench, Content, Structure, Appearance, People, Modules, Cambridge Datasets Module Settings, Configuration, Reports, Hello Administrator, and Log out. Below the navigation bar is a header with the University of Cambridge logo and links for Study at Cambridge, About the University, Research at Cambridge, Quick links, Search, and a magnifying glass icon. A message "Logged in as Administrator / Logout" is displayed. The main title "Cambridge Datasets" is centered above a menu bar with Home, Import Collection, Dataset Collections (which is highlighted in blue), Pending Requests, All Requests, Edit Requests, Mail Queue, and Admin. The central content area is titled "Dataset Collections". On the left, there's a sidebar with "Cambridge Datasets" and a tree view showing "Dataset Collections" (which is expanded) and sub-options like Import Collection and Pending Requests. The main content table has columns for Title, Overview, and Request Access. One row is visible for "NSPN" with "Overview" and "Request Access" buttons.

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 Cambridge Datasets interface for the "NSPN" dataset collection. The top navigation and header are identical to the previous screenshot. The main title is "NSPN". The sidebar on the left shows the "Import Collection" section is active. The main content area has tabs for "View" (which is selected) and "Edit". Under "View", there's a "Body:" section containing the text "NSPN". Under "Edit", there's a "Reviewers:" section with a "Add" link. Below that is a "Datasets:" section with a table. The table has columns for "Code" and "Title". It contains three rows: "code1" (Imaging Data: Collection of brains scans), "code2" (Interview Data: Interviews with participants), and "code3" (Imaging Data: Brain ECT patterns). Each 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:

Reviewer	Roles	Edit	Delete
Administrator	administrator	Edit	Delete
FinalReviewer1	finalreviewer	Edit	Delete
Reviewer1	reviewer	Edit	Delete

It is recommended that you add in the main “Administrator” user so they can see requests in the “Pending requests” 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 Requests**

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

- **All Requests**

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

- **Edit Requests**

Show a list of all requests across the entire system. This may be useful if a request 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 a web browser window for the "Cambridge Datasets" application. The title bar reads "Mail Queue | Cambridge Datasets". The page header includes links for "My Workbench", "Content", "Structure", "Appearance", "People", "Modules", "Cambridge Datasets Module Settings", "Configuration", "Reports", "Hello Administrator", and "Log out". The main navigation menu at the top has items: Home, Import Collection, Dataset Collections, Pending Requests, All Requests, Edit Requests, Mail Queue, Admin. Below the menu, a sidebar on the left lists "Mail Queue", "Import Collection", "Dataset Collections", "Pending Requests", "All Requests", "Edit Requests", and "Admin". The main content area is titled "Mail Queue" and contains a table of messages. The table columns are: Subject, Email, Sent, Type, and Updated date. The table rows show three messages:

Subject	Email	Sent	Type	Updated date
Dataset Access Enabled	haselwimmer@gmail.com	Unsent	Specific message	Wednesday, 24 July, 2019 - 12:17
Dataset Access Enabled	haselwimmer@gmail.com	Unsent	Specific message	Wednesday, 24 July, 2019 - 12:08
Dataset Access Request Received	shaselwimmer@cantab.net	Unsent	Request received notification	Wednesday, 24 July, 2019 - 11:56

A "Process message queue" button is located above the table. The URL in the address bar is "Not Secure | psychiatrytest/mail-queue".

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 the sample CSV file at `cambridge_datasets_application/sample/sample.csv` 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	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 request form Text before list of datasets Reviewers [<i>field collection*</i>] Datasets [<i>field collection*</i>]
* 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)	Title (= [Collection title]: [Dataset Title]) Code Dataset Title (Original dataset title from CSV file) Location
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”.	

Content Type	Mail
Description	Stores queued mail
Extra Fields (redundant fields not shown)	Type (“0” = Specific email, “1” = Request received notification) Sent Email Title Body
	“Type” field is designed to avoid deluging reviewers with notification emails. If mail type = “0”, a new entry is added to mail queue for every new email request of that type (standard behaviour). If 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 prevents multiple duplicate “Request received” notifications being sent during cron runs.
Content Type	Request
Description	Stores every request 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*]
	* field_collection and field_collection_views Drupal modules are used to manage many-to-many relationships including their display within admin screens and views.

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 Requests

Description List of requests 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 Requests
Description	Full list of all requests, 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 Requests

Description List of submitted requests the user has access to

Access Reviewer
Final Reviewer
Administrator

View Review All Requests

Description Review all requests the user has access to

Access Final Reviewer
Administrator

View Review Pending Requests

Description Review all submitted requests 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 Requests
- Review Pending Requests

4.4 Drupal Tutorial

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