



DIGITISED DRO



Tapiwa Chikwanda
System Design Document

Table of Contents.....	2
User Interface Design.....	4
Desktop – Web-Based GUI	4
Initialisation Screens – No Direct Interaction	4
Sign In Form	5
Landing Page (Admin)	6
Pending Notices Table (Admin).....	11
Notice Groups List (Admin).....	13
New Notice Google Form.....	15
Export to PDF Form.....	20
Personalised Notices Feed	22
View All Notices Table.....	26
Header Drop Downs.....	28
Change Password Form	29
Mobile – Progressive Web APP (PWA)	30
Initialisation Screens – No Direct Interaction	30
Sign In Form	31
Personalised Notices Feed	32
Header Menu	34
Subscriptions Menu	36
View All Notices Feed.....	38
Logout Modal.....	39
Secondary Storage Design	40
Users	40
Students	41
Notices	42
Groups.....	43
Sections.....	44
Subscriptions.....	45
Mentions.....	46
Relationships.....	47
Explanation of Secondary Storage Design	48


DESKTOP – WEB-BASED GUI

Unless specified otherwise, the screenshots below pertain to Staff users

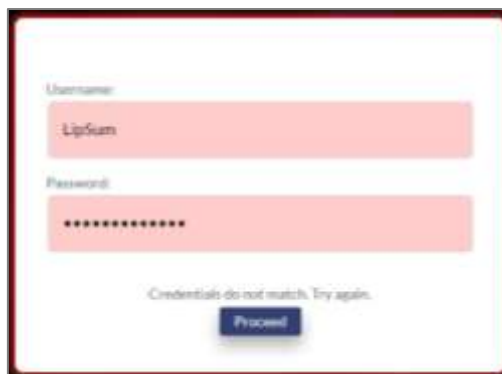
INITIALISATION SCREENS – NO DIRECT INTERACTION



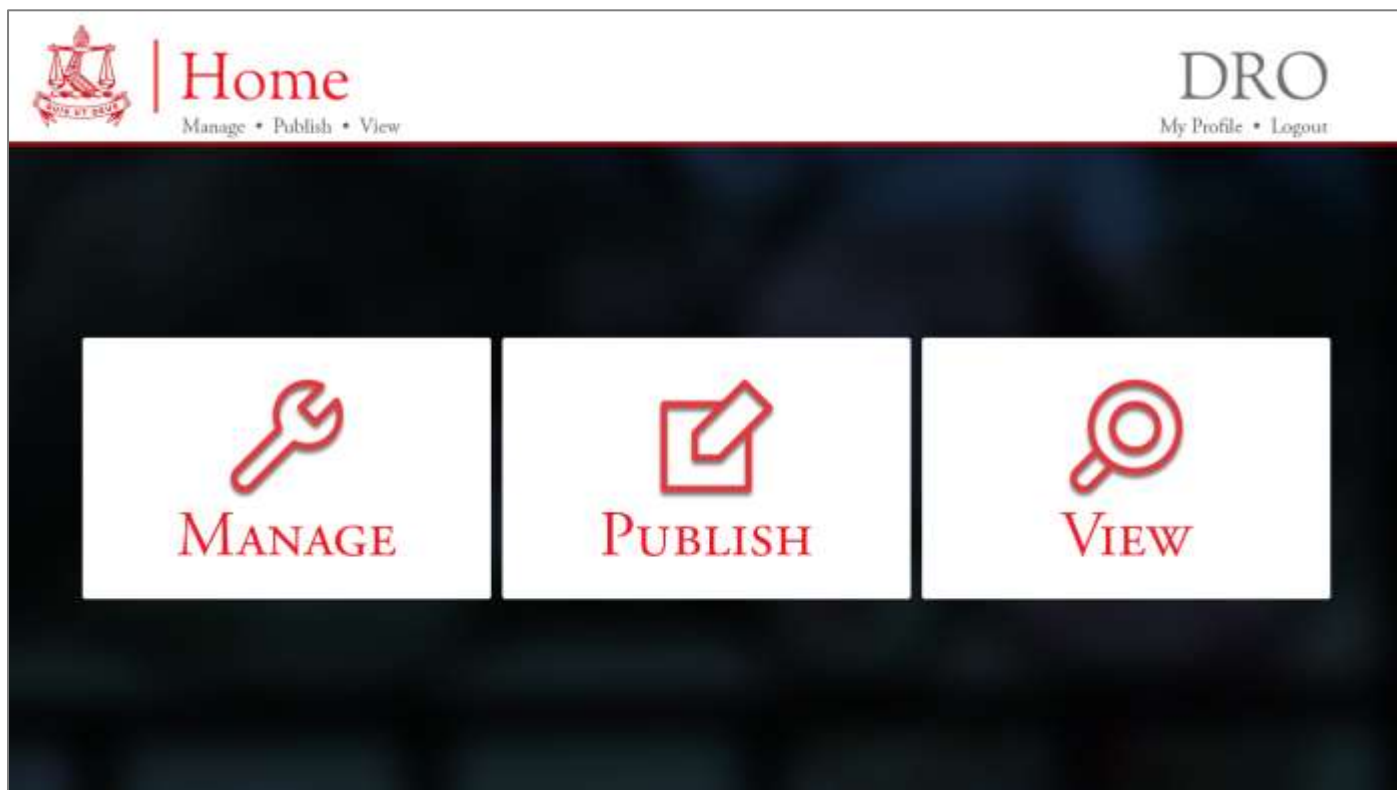
SIGN IN FORM

A screenshot of a web application's sign-in form. The header features a red crest logo on the left, the text "Sign In" in red, and "DRO" in grey on the right. The main area has a dark blue background with a white sign-in box in the center. Inside the box, there are two text input fields: "Username:" with the text "LipSum" and "Password:" with masked characters "*****". A blue "Proceed" button is at the bottom of the box.

UI Element	Function
Text Field "Username"	Allows user to enter their username
Text Field "Password"	Allows user to enter their password
Button "Proceed"	If details valid – directs user to their relevant home page If details invalid – formats the dialog box as below

A screenshot of the sign-in form showing an error state. The "Username:" and "Password:" input fields are highlighted with a light red background. Below the fields, the text "Credentials do not match. Try again." is displayed in a small, grey font. The blue "Proceed" button remains at the bottom.

LANDING PAGE (ADMIN)



UI Element	Function
Container “Manage”	On Hover – Expands to reveal drop-down menu of hyperlinks to Admin screens
Container “Publish”	On Hover – Expands to reveal drop-down menu of hyperlinks to Staff screens
Container “View”	On Hover – Expands to reveal drop-down menu of hyperlinks Student screens

MANAGE DROP-DOWN MENU



UI Element	Function
Hyperlink “Pending Notices”	Directs user to the “Pending” webpage
Hyperlink “Notice Groups”	Directs user to the “Groups” webpage

PUBLISH DROP-DOWN MENU



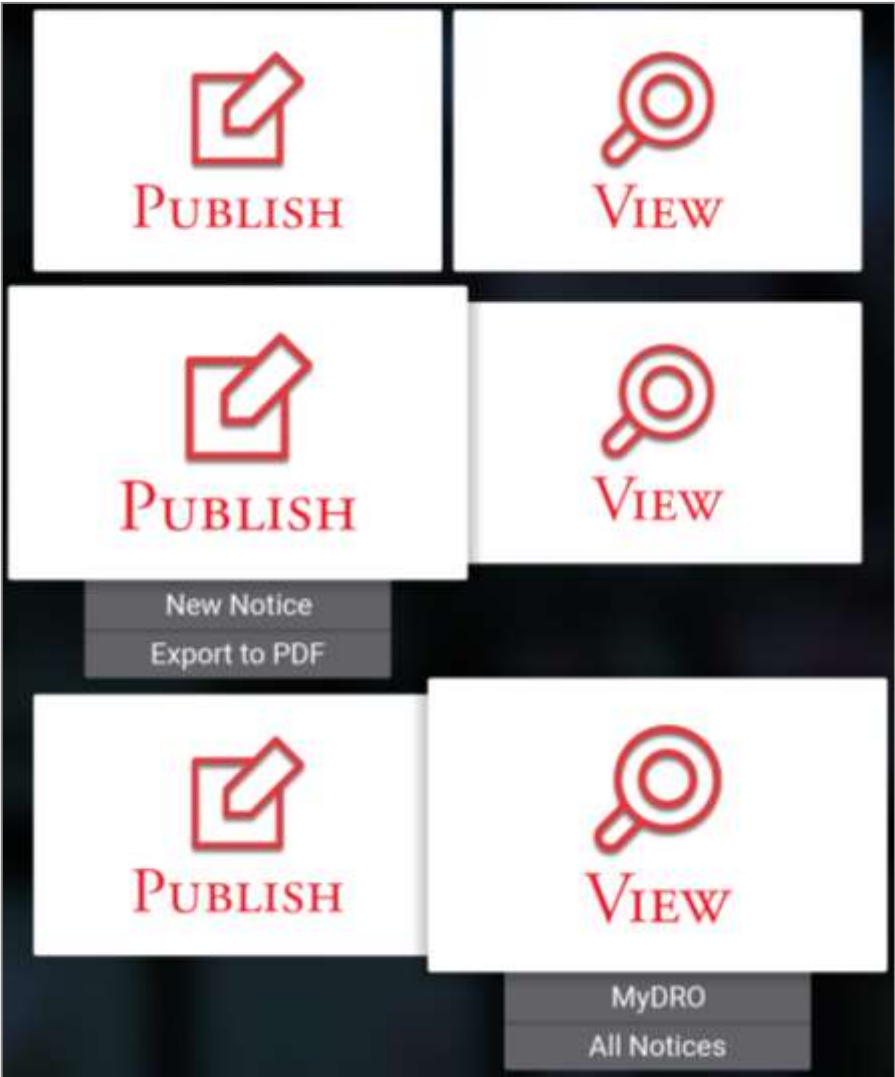
UI Element	Function
Hyperlink “New Notice”	Directs user to the “New” webpage
Hyperlink “Export to PDF”	Directs user to the “Export” webpage

VIEW DROP-DOWN MENU




UI Element	Function
Hyperlink “MyDro”	Directs user to the “[first_name]’s Feed” webpage
Hyperlink “All Notices”	Directs user to the “View All” webpage

“Manage” Container Omitted



PENDING NOTICES TABLE (ADMIN)



Pending

Home • Manage • Publish • View

DRO

My Profile • Logout

Date	Group	Title	Description	User	Approve?
19 May	Mountain Biking	Hendrerit Gravida	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Pharetra et ultrices neque ornare aenean. Senectus et netus et malesuada. Nunc scelerisque viverra mauris in aliquam sem. Duis ultricies lacus sed turpis tincidunt.	D Massa	<input checked="" type="checkbox"/> <input type="checkbox"/>
21 Jul	Toastmasters	Rutrum Quisque non Tellus	Faucibus interdum posuere lorem ipsum dolor sit amet consectetur. Conmodo viverra maecenas accumsan lacus vel facilisis volutpat. Nulla facilisi nullam vehicula ipsum a arcu cursus vitae congue.	S Faucibus	<input checked="" type="checkbox"/> <input type="checkbox"/>
14 Aug	Film Appreciation Society	Pulvinar Mattis Nunc	A pellentesque sit amet porttitor eget dolor morbi non arcu. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Adipiscing enim eu turpis egestas pretium aenean pharetra. Aliquam ultrices sagittis orci a scelerisque. Netus et malesuada fames ac turpis egestas sed tempus. Ligula ullamcorper malesuada proin libero nunc consequat interdum varius.	E Molestie	<input checked="" type="checkbox"/> <input type="checkbox"/>
26 Aug	Saturday Night Restrictions	Tortort	Etiam erat velit scelerisque in dictum non consectetur. Id semper risus in hendrerit.	V Lectus	<input checked="" type="checkbox"/> <input type="checkbox"/>
4 Sep	African Affairs	Lacus Sed	Tristique et egestas quis ipsum suspendisse ultrices gravida dictum fusce. Rhoncus aenean vel elit scelerisque mauris. Nunc eget lorem dolor sed viverra ipsum nunc aliquet. Nulla at volutpat diam ut. Malesuada fames ac turpis egestas integer eget aliquet. Euismod in	M Ultr	<input checked="" type="checkbox"/> <input type="checkbox"/>

UI Element	Location	Function
Döner Menu	Header	Reveals relevant filter drop-down dialog – see below
Radio Button Checkmark	Column: [Approve?]	Once the page is saved, includes the notice in the DRO and removes it from “Pending”
Radio Button X mark	Column: [Approve?]	Once the page is saved, excludes the notice from the DRO and removes it from “Pending” {Notify [User] of declining}
Cell Contents	Columns: [Title]; [Description]	On click – show text field/area where user can edit the notice before approving
Button “Keep”	Cell Editing	Confirm edits
Button “Discard”	Cell Editing	Revoke edits
Button “Save Changes”	Bottom Right	Updates the Notices Table with any changes

HEADER DÖNER MENU

datetime

String

Sort A → Z

Sort Z → A

Sort by colour

Filter by colour

Filter by condition

Filter by values

Select all Clear

2020-05-18 15:56:10

2020-07-21 03:41:33

2020-08-14 19:25:32

2020-08-25 12:38:05

Cancel

OK

Sort A → Z

Sort Z → A

Sort by colour

Filter by colour

Filter by condition

Filter by values

Select all Clear

Bridley

Canty

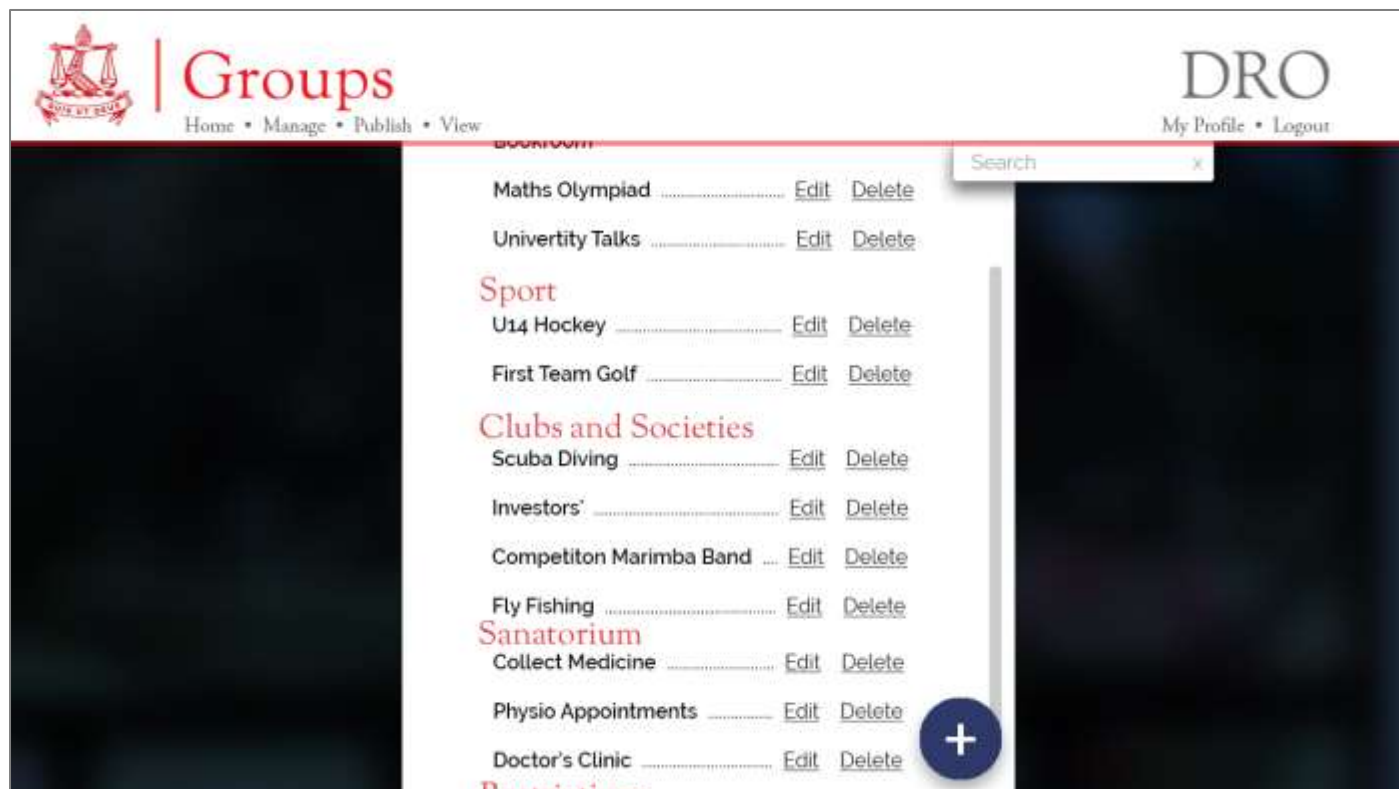
Coleman

Crockett

Cancel

OK

NOTICE GROUPS LIST (ADMIN)



UI Element	Function
Text Field "Search"	Allows user to filter groups according to their search query
Button "Edit"	Produces text field where user can edit the name of the notification group {Similar Approach to Notice editing; section change}
Button "Delete"	Removes the notification group from the system {Confirmation}
Button Plus Sign	Opens "Add Group" floating dialog

ADD GROUP FLOATING DIALOG



UI Element	Function
Drop-down "Section"	Allows user to choose from the available notification group sections
Text Field "Name"	Allows user to type a name for the new notification group
Button "Save"	Inserts the new notification group into the Groups Table

NEW NOTICE GOOGLE FORM



DATE

UI Element	Function
Date Picker "Date"	Allows user to select the date on which their notice should display

GROUP



UI Element	Function
Drop-down "Group"	Allows user to select a group under which their notice falls

TITLE AND DESCRIPTION

Title *

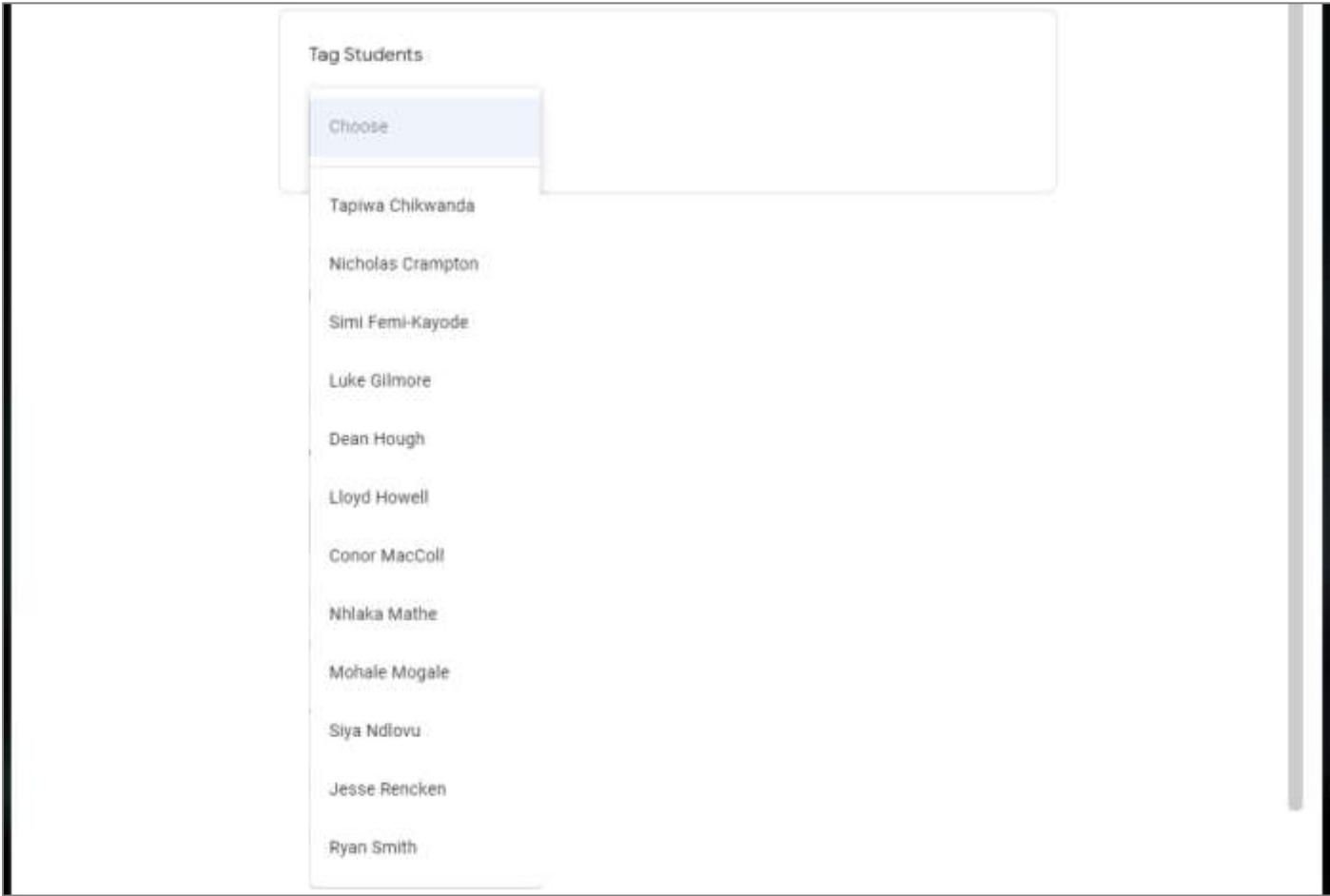
Your answer

Description *

Your answer

UI Element	Function
Text Field "Title"	Allows user to enter a title for their notice
Text Area "Description"	Allows user to enter a description for their notice

TAG STUDENTS



UI Element	Function
List box “Tag Students”	Allows user to tag specific students manually

SUBMIT



UI Element	Function
Button “Submit”	Inserts a tuple with the above information into the Notices Table

EXPORT TO PDF FORM

Export
Home • Manage • Publish • View

DRO
My Profile • Logout

Date: DD / Month / 2020▼
Today ☒

Sections: Select from List ▼
Select All ☐
× General Notices × Clubs and Societies
× Sanatorium × Restrictions

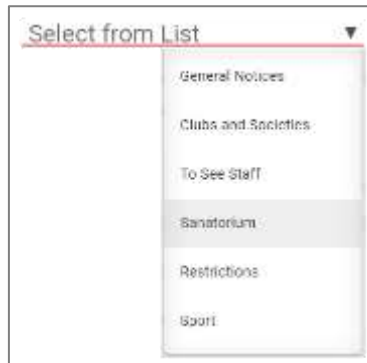
Proceed

UI Element	Function
Date Picker “Date”	Allows user to select a date whose notices to export
Checkbox “Today”	Sets the date picker to the current date
List box “Section”	Allows user to select multiple sections to export
Checkbox “Select All”	Selects every available section
Button “Proceed”	Generates PDF


DATE PICKER DROP DOWN



SECTION SELECTION DROP DOWN



OUTPUT

**Export**
Home • Manage • Publish • View

DRO
My Profile • Logout

025 DRO FrQ2February2020.pdf1 / 2

Daily Routine Order

21 February 2020 : FRIDAY : **WHITE** Week 06

NOTICES	
1	UNIVERSITY VISIT: Who: Crimson - They help to get sports scholarships at universities in the USA. When: Today @ 14h05. Where: LO Classroom.
2	CATHOLIC MASS: There will be Mass on Sunday at 19h00 in the Crypt.
3	LOST: An apple watch and an analogue watch were left in indoor centre during Wednesday's inter-house basketball. If they belong to you see Mr Sladrecht in the Science office.
4	CHAPEL CHOIR: Choir workshop times for the weekend will be as follows: Today: 15h00 – 17h30 and Sunday 10h30 – 13h00.
5	LOST: school bag belonging to Callum James. Please speak to Mr Forward if found.
6	GYM TIMES: 07h30 – 09h15 14h45 – 17h30 20h20 – 21h00

CLUBS AND SOCIETIES	
1	DEBATING SOCIETY meeting on Sunday directly after chapel in Mr Smith Classroom. We will be focusing on improving speech training in preparation for inter-house events. Anyone interested in learning a bit about this skill is welcome.
2	SNELL SOCIETY: there is a Snell Society meeting this Sunday at 19h45 in the Centenary Centre. Nathan Bui and Sam Frost will be doing their presentations. Staff and boys are encouraged to attend.
3	INVESTMENT CLUB: Meeting in the media centre on Friday evening at 19h15

SANATORIUM	
1	PHYSIO WITH KIRSTY MARSH IN THE FIRST AID ROOM: 14h00 J Parsons, 14h30 J Weyers, 15h00 J Baxter, 15h30 A Young, 16h00 J Quinn
2	PHYSIO WITH LEANNE ST CLAIR IN FIRST AID ROOM: 14h30 A Nola, 15h00 K Assarung, 15h30 M Spencer
3	SAN TRANSPORT LEAVING @ 13H50: C MacCoff, O Carrie

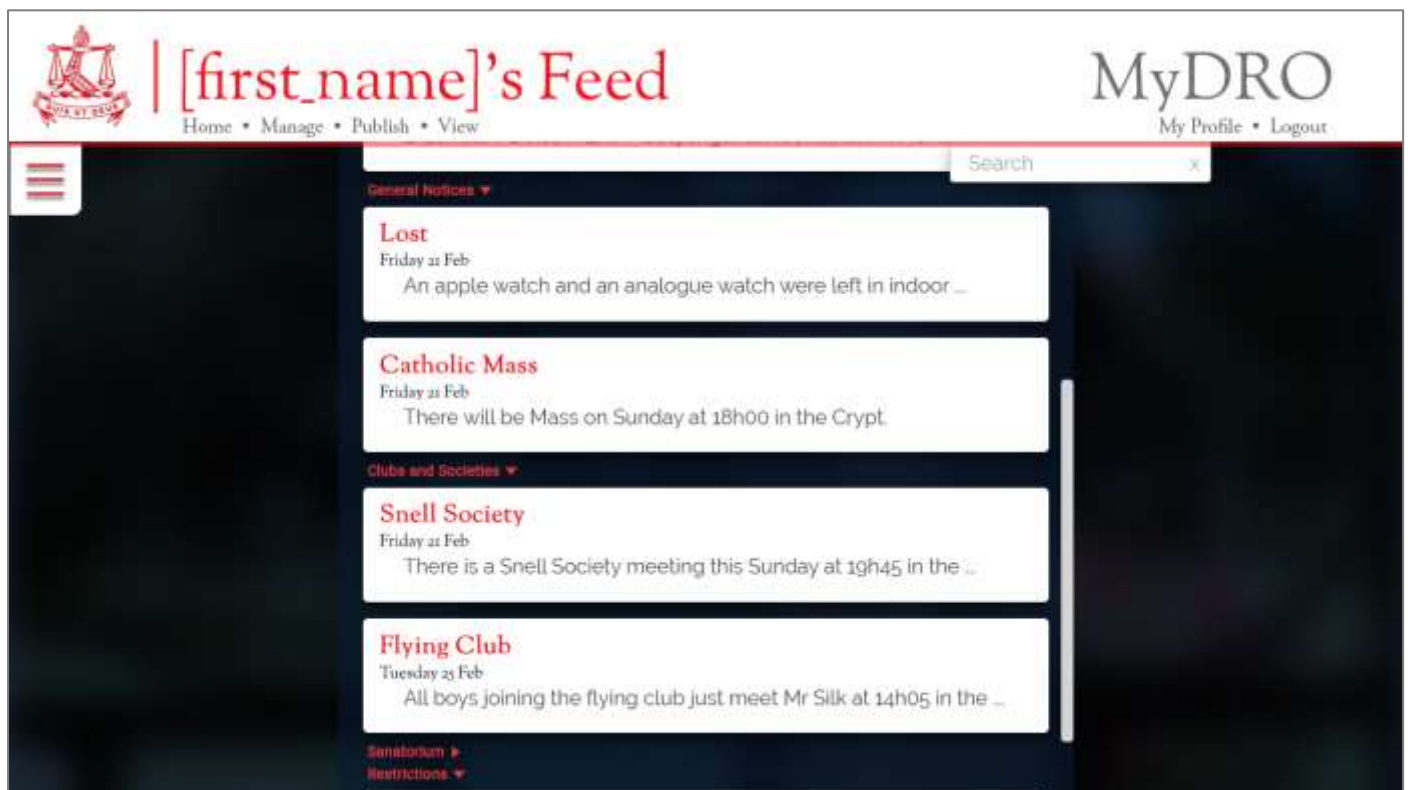
UI Element

Function

Browser PDF Viewer

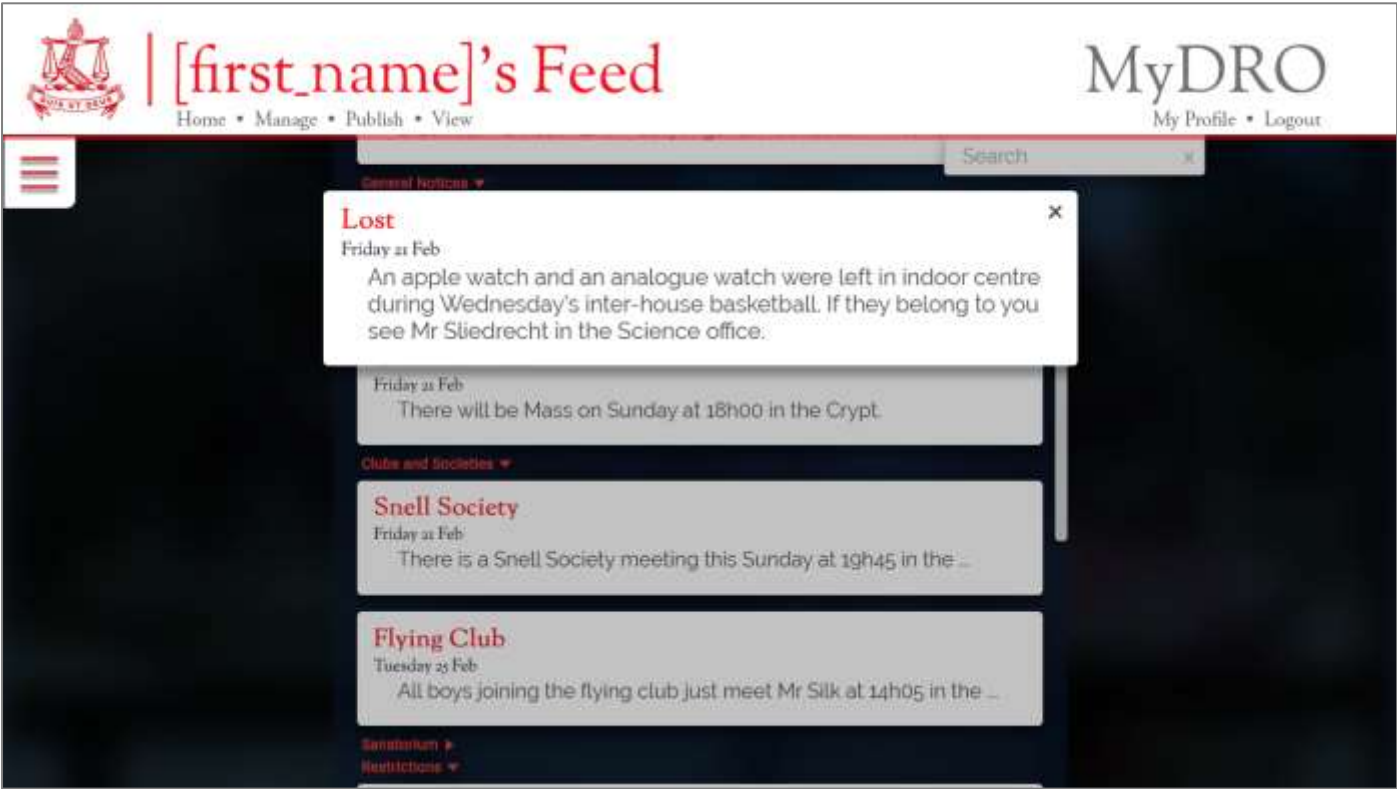
Display and allow download of exported PDF

PERSONALISED NOTICES FEED



UI Element	Function
Hamburger Menu	Reveals/Conceals the sidebar
Text Field "Search"	Allows user to filter notices according to their search query
Buttons Section Titles	Allows user to expand and collapse specific sections
Cards Individual Notices	On Click – expands to show full contents as below

EXPANDED NOTICE



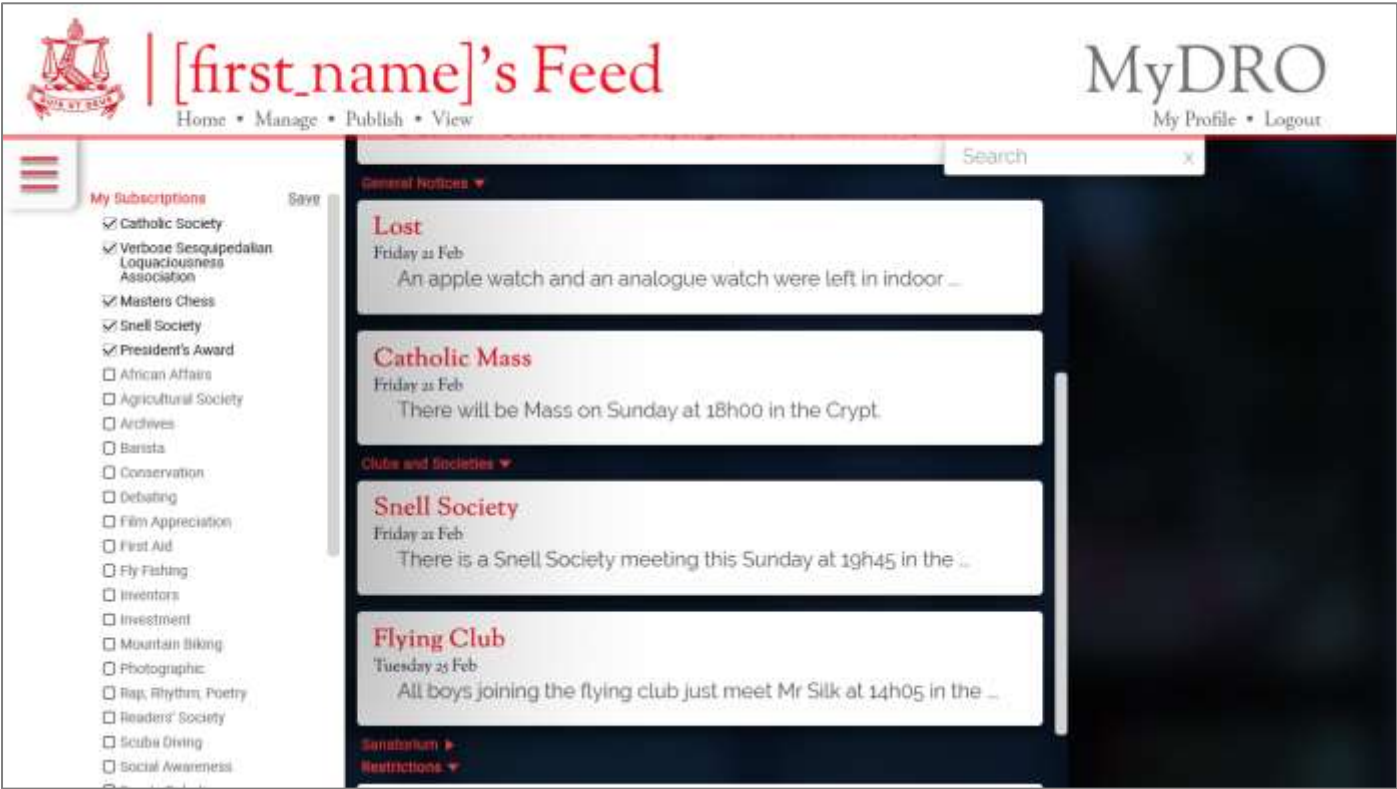
UI Element	Function
Button X Mark	Allows user to collapse the notice and return to the feed

SIDEBAR

The screenshot shows the MyDRO user interface. At the top left is a logo with a shield and the text 'DRO BY SECU'. Next to it is the title '[first_name]'s Feed' in a large, stylized font. Below the title are links: 'Home • Manage • Publish • View'. On the top right is the 'MyDRO' logo with links 'My Profile • Logout'. Below the top bar is a search bar with the text 'Search' and a close button 'x'. On the left sidebar, there is a 'Filter' section with a date range picker (DD / Month / 2020) and an 'Apply' button. Below the date picker is a 'My Subscriptions' section with a list of subscriptions: Catholic Society, Verbose Sesquipedalian Loquaciousness Association, Masters Chess, Snell Society, and President's Award. An 'Edit' button is next to the list. The main content area displays a list of notices. The first notice is 'Lost' with the date 'Friday 21 Feb' and the text 'An apple watch and an analogue watch were left in indoor ...'. The second notice is 'Catholic Mass' with the date 'Friday 21 Feb' and the text 'There will be Mass on Sunday at 18h00 in the Crypt'. The third notice is 'Snell Society' with the date 'Friday 21 Feb' and the text 'There is a Snell Society meeting this Sunday at 19h45 in the ...'. The fourth notice is 'Flying Club' with the date 'Tuesday 25 Feb' and the text 'All boys joining the flying club just meet Mr Silk at 14h05 in the ...'. At the bottom of the sidebar, there are links for 'Sanctions' and 'Restrictions'.


UI Element	Function
Button “Apply”	Displays the notices with the selected date filter applied
Date Pickers “Date”	Allows user to specify a date range to filter the notices shown
Button “Edit”	Invokes Subscription editor – see below
Buttons Subscription Names	Allows user to filter their notices by notification group

SUBSCRIPTION EDITOR



UI Element	Function
Button "Save"	Allows user to save the changes to their subscriptions
Checkboxes	Allows user to add or remove subscriptions

VIEW ALL NOTICES TABLE



View All

Home • Manage • Publish • View


DRO

My Profile • Logout

Date	Group	Title	Description
21 Feb	University Visits	University Visit	Who: Crimson - They help to get sports scholarships at universities in the USA. When: Today @ 14h05. Where: LO Classroom
21 Feb	Catholic	Catholic Mass	There will be Mass on Sunday at 18h00 in the Crypt
21 Feb	Conditioning	Gym Tyems	05h30 – 06h15 14h45 – 17h30 20h20 – 21h00
21 Feb	Chapel Choir	Chapel Choir	Choir workshop times for the weekend will be as follows: Today 15h00 – 17h30 and Sunday 10h30 – 13h00.
21 Feb	Lost and Found	Lost	An apple watch and an analogue watch were left in indoor centre during Wednesday's inter-house basketball. If they belong to you see Mr Sliedrecht in the Science office
21 Feb	Debating	Debating	Meeting on Sunday directly after chapel in Mr Smith's Classroom. We will be focusing on impromptu speech training in preparation for interhouse events. Anyone interested in learning a bit about this skill is welcome.
21 Feb	Lost and Found	Lost	school bag belonging to Callum James. Please speak to Mr Forward if found.
21 Feb	Snell Society	Snell Society	There is a Snell Society meeting this Sunday at 19h45 in the Centenary Centre. Nathan Bau and Sam Frost will be doing

UI Element	Location	Function
Döner Menu	Header	Reveals relevant filter drop-down dialog
Cell Contents	Columns: [Title]; [Description]	On click – show text field/area where user can edit the notice
Button “Save”	Cell Editing	Confirm edits
Button “Discard”	Cell Editing	Revoke edits

STAFF EDITING VARIATION



View All

Home • Publish • View

DRO
My Profile • Logout

Date	Group	Title	Description
21 Feb	University Visits	University Visit	Who: Crimson - They help to get sports scholarships at universities in the USA. When: Today @ 14h05. Where: LO Classroom
21 Feb	Catholic	Catholic Mass	There will be Mass on Sunday at 18h00 in the Crypt
21 Feb	Conditioning	<div><div>Gym Tyems</div><div>RequestDiscard</div></div>	05h30 - 06h15 14h45 - 17h30 20h20 - 21h00
21 Feb	Chapel Choir	Chapel Choir	Choir workshop times for the weekend will be as follows: Today 15h00 - 17h30 and Sunday 10h30 - 13h00.
21 Feb	Lost and Found	Lost	An apple watch and an analogue watch were left in indoor centre during Wednesday's inter-house basketball. If they belong to you see Mr Sliedrecht in the Science office
21 Feb	Debating	Debating	Meeting on Sunday directly after chapel in Mr Smith's Classroom. We will be focusing on impromptu speech training in preparation for interhouse events. Anyone interested in learning a bit about this skill is welcome.
21 Feb	Lost and Found	Lost	school bag belonging to Callum James. Please speak to Mr Forward if found.
21 Feb	Snell Society	Snell Society	There is a Snell Society meeting this Sunday at 19h45 in the Centenary Centre. Nathan Bau and Sam Frost will be doing

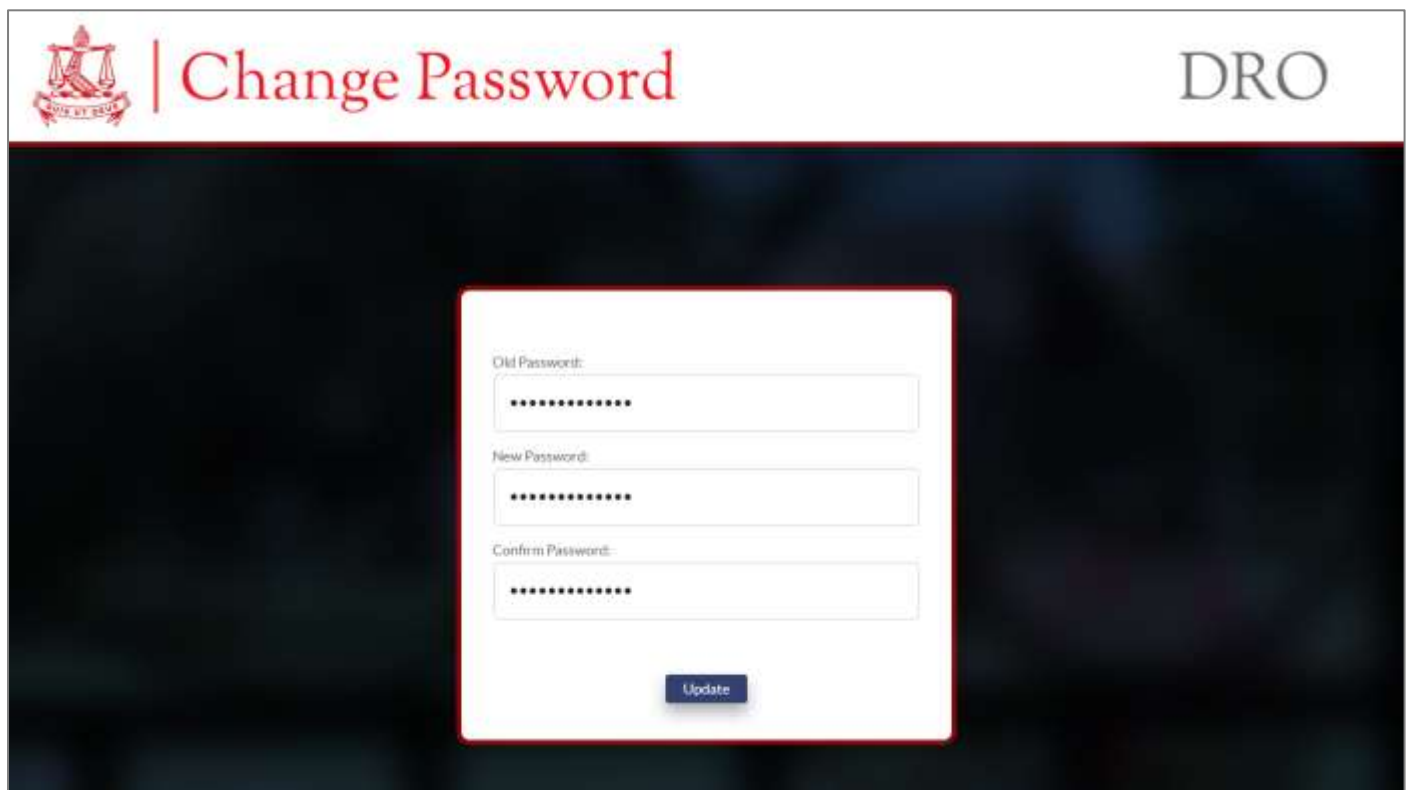
UI Element	Location	Function
Button "Request"	Cell Editing	Request Admin approval of Edits

HEADER DROP DOWNS



UI Element	Function
Hyperlink “Pending Notices”	Directs user to the “Pending” webpage
Hyperlink “Notice Groups”	Directs user to the “Groups” webpage
Hyperlink “New Notice”	Directs user to the “New” webpage
Hyperlink “Export to PDF”	Directs user to the “Export” webpage
Hyperlink “MyDRO”	Directs user to the “[first_name]’s Feed” webpage
Hyperlink “All Notices”	Directs user to the “View All” webpage
Hyperlink “Change Password”	Directs user to the “Change Password” webpage
Hyperlink “Confirm”	Logs user out and directs to the “Sign In” webpage

CHANGE PASSWORD FORM



The screenshot shows the 'Change Password' form in the DRO system. The form is centered on a dark blue background. It features three text input fields for 'Old Password:', 'New Password:', and 'Confirm Password:', each containing a series of asterisks. Below these fields is a blue 'Update' button. The top of the page includes a red crest logo, the text 'Change Password', and the 'DRO' logo.

UI Element	Function
Text Field "Old Password"	Allows user to enter their current password
Text Field "New Password"	Allows user to enter their new password
Text Field "Confirm Password"	Allows user to verify their new password
Button "Update"	If details valid – Updates the Users table and directs user to their previous page If details invalid – formats the dialog box as below



This screenshot shows the 'Change Password' form with an error state. The three text input fields for 'Old Password:', 'New Password:', and 'Confirm Password:' are highlighted with a light red background. Below the fields, the text 'Invalid Input. Try Again.' is displayed. The blue 'Update' button remains at the bottom.


Available only to Student Users

INITIALISATION SCREENS – NO DIRECT INTERACTION



The right screen displays the "MyDRO" logo in a red serif font. Below the logo is a loading indicator consisting of four dots, with the second dot from the left being larger and filled. Below the dots, the text "Loading..." is displayed in a small, grey, sans-serif font. The entire content is framed by two horizontal red lines, one above and one below.

SIGN IN FORM

 | Sign In

MyDRO

Admin No:

8515

View My Notices

☐ Remember Me

UI Element	Function
Text Field "Admin No"	Allows user to enter their Student Administration Number
Button "View My Notices"	If details valid – directs user to the "[first_name]'s Feed" webpage If details invalid – formats page as below
Checkbox "Remember Me"	Keeps user signed in across multiple visits to the website

Admin No:

223867

View My Notices

☒ Remember Me

PERSONALISED NOTICES FEED



UI Element	Function
Buttons Section Titles	Allows user to expand and collapse specific sections
Cards Individual Notices	On Tap – expands to show full contents as below



UI Element	Function
Button X Mark	Allows user to collapse the notice and return to the feed

HEADER MENU



UI Element	Function
Hamburger Menu	Reveals/Conceals the collapsible menu
Button "Subscriptions"	Opens/Closes the Subscriptions Menu
Button "All Notices"	Directs user to the "View All" webpage
Button "Notifications On/Off"	Toggles OS-Based Notifications
Button "Logout"	Opens Logout Modal


NOTIFICATIONS TOGGLE OFF




SUBSCRIPTIONS MENU



UI Element	Function
Button "Edit"	Invokes Subscription editor – see below
Buttons Subscription Names	Allows user to filter their notices by notification group



[first_name]'s Feed



SUBSCRIPTIONS

Apply

Catholic Society

☒

Verbose Sesquipedalian

☒

Loquaciousness

☐

Association

☐

Masters Chess

☒

Snell Society

☒

President's Award

☒

African Affairs

☐

Agricultural Society

☐

Archives

☐

Barista

☐

Conservation

☐

Debating

☐

Film Appreciation

☐

First Aid

☐

Fly Fishing

☐

Inventors

☐

Investment

☐

UI Element	Function
Button “Apply” {Change to Save}	Allows user to save the changes to their subscriptions
Checkboxes	Allows user to add or remove subscriptions

VIEW ALL NOTICES FEED



UI Element	Function
Buttons Section Titles	Allows user to expand and collapse specific sections

LOGOUT MODAL



UI Element	Function
Button “Cancel”	Returns to the Header Menu
Button “Confirm”	Logs user out and directs to the “Sign In” webpage

All persistent data for the system will be stored on a centralised database comprising 7 relations. Primary keys are denoted with bold and underlined field names.

USERS

Stores the identification and rights of every user on the system

Table Specifications				
#	field_name	data_type	Extra	Notes
1	<u>user_id</u>	10-bit integer	auto_increment	
2	rights	enum		0-Students; 1-Staff; 2-Admins
3	first_name	40-character String		
4	surname	40-character String		
5	username	8-character String	2-character overflow	NULL for Students; typically the first 3 letters from name and surname
6	password	62-character String	2-character overflow	NULL for Students; bcrypt hash of password

Mock Data					
<u>user_id</u>	rights	first_name	surname	username	password
1	1	Glennie	Murrish	gmurri	\$2y\$04\$6A3wqS3XgAlmowlZMA6KPeqV41hnvnTsX75pqPZq4VOB1HNMIivWe
2	0	Bone	Crocket	NULL	NULL
3	0	Vivi	Canty	NULL	NULL
4	2	Reyna	Kidds	rkidds	\$2y\$04\$UKV35By61WXQE/AQQnf9g.12weUKsgIL8..BpNu4iA.oXa0zb4Pf6
5	1	Paxton	Braidley	pbraid	\$2y\$04\$5uB.gSlymv1tgC3bdp17LuMgLI9BMx6j6799luL705c5XRYhMZnq
6	2	Candace	Peacher	cpeach	\$2y\$04\$xMw419GLTG4U/r1aTnOekuWkPmnisPYKx1p19CSqWvnneA1AbUJAe
7	0	Jenine	Holdron	NULL	NULL
8	2	Alf	Roddie	aroddi	\$2y\$04\$kYEUBIwtt00Mz9xLoiDj.z0mL49s/isEvGfYZUzPEFH1/N1ERA0.
9	0	Silvano	Deegan	NULL	NULL
10	0	Twyla	Colrein	NULL	NULL

STUDENTS

Stores the Administration Number of Student-type users

Table Specifications				
#	field_name	data_type	Extra	Notes
1	<u>user_id</u>	10-bit integer		
2	admin_no	16-bit Integer	unique values	

Mock Data	
<u>user_id</u>	admin_no
2	4766
3	8523
7	10111
9	3592
10	1493

NOTICES

Stores the contents and attributes of notices

Table Specifications				
#	field_name	data_type	Extra	Notes
1	<u>notice_id</u>	10-bit integer	auto_increment	Assumes 2 weeks averaging ~ 20 notices per day
2	user_id	10-bit integer		User who requested notice; foreign key from users table
3	publish_date	datetime		
4	display_date	datetime		
5	group_id	6-bit integer		Foreign key from groups table
6	title	70-character String		
7	description	400-character String		Subject to change once I survey common lengths
8	approval_status	enum	0-Pending, 1-Declined, 2-Approved	

Mock Data							
<u>notice_id</u>	user_id	publish_date	display_date	group_id	title	description	approval_status
5	62	2020-05-18 15:56:10	19/05/2020	6	...	...	0
7	389	2020-07-21 03:41:33	21/07/2020	42	...	...	1
45	305	2020-08-14 19:25:32	14/08/2020	8	...	...	0
47	237	2020-08-25 12:36:05	26/08/2020	2	...	...	1
93	66	2020-09-04 00:42:53	04/09/2020	26	...	...	2
122	356	2020-09-04 08:27:25	04/09/2020	31	...	...	2
207	275	2020-11-18 16:17:22	18/11/2020	18	...	...	0
223	88	2020-11-21 04:13:12	23/11/2020	35	...	...	1
224	271	2020-12-08 01:58:24	09/12/2020	45	...	...	1
234	58	2020-12-28 12:23:03	29/12/2020	19	...	...	0

GROUPS

Stores the name of each notification group and the section under which it falls

Table Specifications				
#	field_name	data_type	Extra	Notes
1	<u>group_id</u>	6-bit integer	auto_increment	
2	section_id	4-bit integer	based on the 6 currently used sections, with leeway for expansion	Foreign key from sections table
3	name	50-character String		

Mock Data		
<u>group_id</u>	section_id	name
1	2	Barista
2	5	Catholic Society
3	2	Conservation
4	4	Debating
5	0	Mountainbiking
6	1	Photographic
7	4	Music Lessons
8	3	Theatre
9	1	English Olympiad
10	3	Extra Science

SECTIONS

Stores the name of each section

Table Specifications				
#	field_name	data_type	Extra	Notes
1	<u>section_id</u>	4-bit integer		
2	name	30-character String		

Mock Data	
<u>section_id</u>	name
1	General Notices
2	Sport
3	Clubs and Societies
4	Sanatorium
5	Restrictions
6	To See Staff

SUBSCRIPTIONS

Stores the subscriptions of each user to notification groups

Table Specifications				
#	field_name	data_type	Extra	Notes
1	<u>user_id</u>	10-bit integer		Part of composite primary key; foreign key from users table
2	<u>group_id</u>	6-bit integer		Part of composite primary key; foreign key from groups table

Mock Data	
<u>user_id</u>	<u>group_id</u>
934	30
906	62
527	63
484	37
983	63
458	21
631	37
538	48
718	25
1011	9

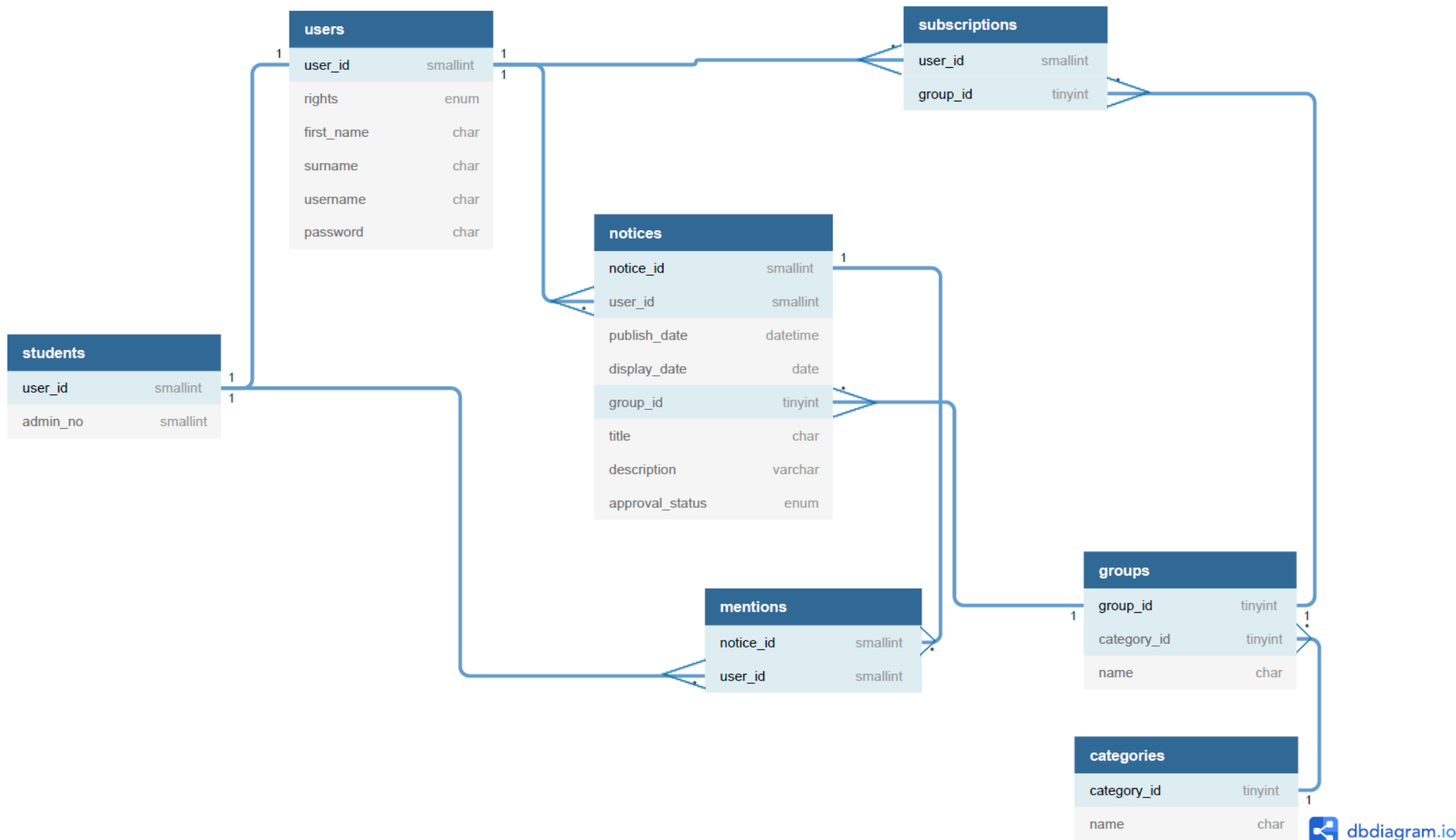
MENTIONS

Stores the students who are tagged in particular notices

Table Specifications				
#	field_name	data_type	Extra	Notes
1	<u>notice_id</u>	10-bit integer		Part of composite primary key; foreign key from notices table
2	<u>user_id</u>	10-bit integer		Part of composite primary key; foreign key from users table

Mock Data	
<u>notice_id</u>	<u>user_id</u>
1016	214
622	541
769	299
788	568
750	359
517	556
515	414
824	45
777	244
163	648

RELATIONSHIPS



Rather than text files or a spreadsheet, I have opted for a relational database managed by Cloud SQL of the Google Apps Suite owing to its support of the CRUD functions underpinning most of my application's procedures. In addition to offering the simplest implementation of the relationships between my tables compared to the other forms of storage, an RDBMS such as this will accommodate the large amounts of data on my application's system.

I have structured my tables according to 3NF, normalising them to limit data redundancy and prevent anomalies.