The James Hutton Institute
Information & Computational Sciences

Germinate 3

User Guide

Version 3.4.0

September, 2017

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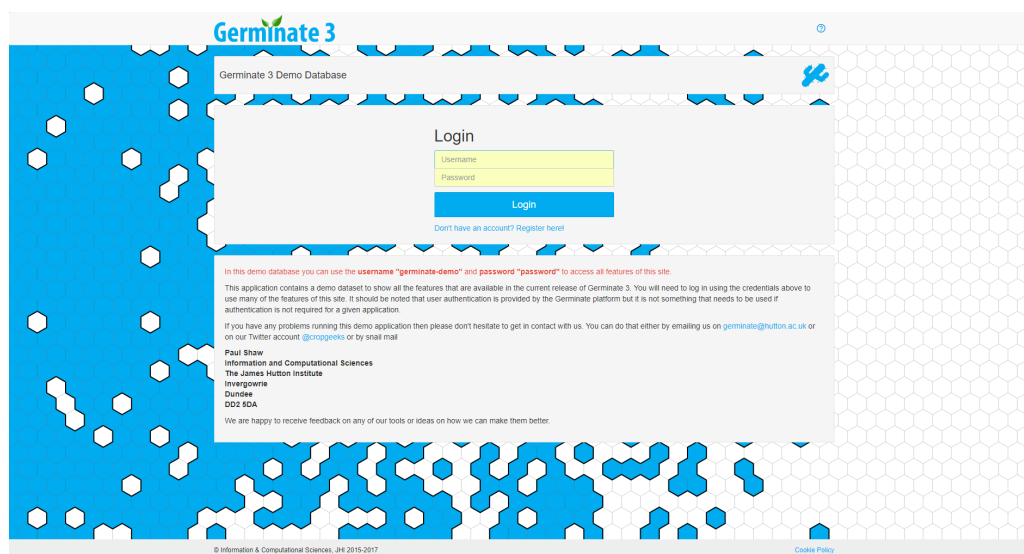# Contents

1 Introduction

TEST

Figure 1: Depending on the configuration of Germinate, you may be asked to log in.

2 Overview

In this section, we will explain the overall structure of Germinate along with an overview of the various data types that Germinate supports.

2.1 Authentication

Germinate can be used with or without user authentication. If the administrator of Germinate decided to enable authentication, you will be asked to log in using a username and password. Figure 1 shows the login page of Germinate. If you already have a user account, simply enter the username and password into the provided text boxes.

If you do not have a user account, click on the link below the login button to create an account. You may get asked to agree to a license agreement before being able to create an account.

2.2 Page layout

Figure 2 shows the main layout of the Germinate web interface. The interface has a banner along the top containing the Germinate logo and a few dropdown menu items in the top right corner (c.f. Figure 2C). These items include the language selector which will be covered in Section 3.1, social media buttons, the marked item lists covered in Section 3.2.2, a user menu with specific functions based on your type of account and, finally, a help button that can be clicked to get more information about the current page (c.f. Section 3.3).
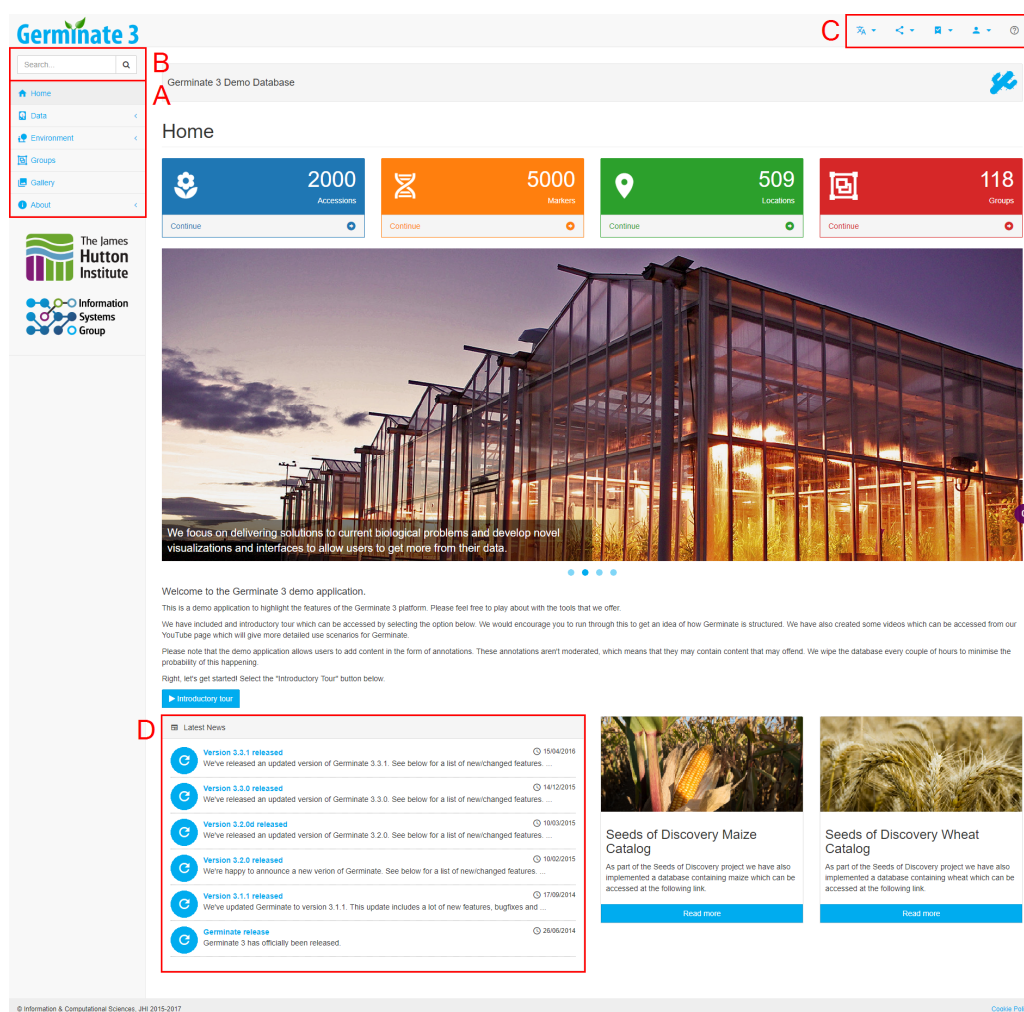
Explain and reference other elements from figure 2

Figure 2: The home page of Germinate is the first page you will see. (A) The main menu of Germinate used to navigate the page. (B) The search box used for free-text searches of the database. (C) Language selector, social media buttons, marked item lists, user menu and the help button. (D) Latest news about this instance of Germinate and the contained data.

Figure 3: Example of the group sub-selection feature: You can select both accession and marker groups during the genotypic data export process to subset the dataset.

3 Features

3.1 User interface language

Germinate fully supports internationalization. This means that the interface can be translated into any number of languages. By default, Germinate is distributed in English. Depending on the configuration of Germinate, other languages might be available. You can switch between them by selecting a language from the first dropdown box shown in Figure 2C.

3.2 Groups

In Germinate we define the concept of a group to be an arbitrary grouping of database items of a certain type. Germinate supports groups of *accessions*, *markers* and *locations*. These groups can be pre-created by an administrator or user-defined, which means that you can create your own groups (assuming user authentication is enabled).

The purpose of these groups becomes clear once you start exporting data. All types of data can either be exported for the whole dataset or the data can be subset into smaller chunks by selecting a single or a selection of groups. The exported data will then contain information about the selected groups only.

An example of this is shown in Figure 3 where we selected a group of accessions (192 out of 2000 accessions) and a group containing a single marker (out of 5000). The resulting data file will consequently contain at most 192 rows and at most a single column of data (it may contain less, if the selected database items are not actually part of the selected dataset).

3.2.1 Creating a group

This section is only applicable if the Germinate instance you are using has user authentication enabled.

In addition to using the predefined groups, you can create new groups of your own. There are multiple ways in which you can create a new group and add items to it. One option is to go to the *Groups* page of Germinate. This page shows you all the existing groups in a table and upon selection, shows you its group members. Figure 4 shows you an example of what the groups page can look like. In this example, Germinate contains 118 different groups that the

Groups

Table filtering searches for exact matches in the specified column. To use fuzzy search, use the wildcard character %. As an example, searching for a country name of kingdom will not return a result whereas searching for %kingdom% will return United Kingdom.

	Id	Group Description	Type	User	Size	Created on
☐	1	All accessions	Accessions	Sebastian Raubach	2,000	08/04/2016
☐	117	Subselection based on pedigree	Accessions	Administrator	192	27/06/2016
☐	4	Afghanistan	Locations	Sebastian Raubach	1	
☐	5	Algeria	Locations	Sebastian Raubach	2	
☐	3	All collecting sites	Locations	Sebastian Raubach	500	08/04/2016
☐	6	Angola	Locations	Sebastian Raubach	1	
☐	7	Argentina	Locations	Sebastian Raubach	6	
☐	8	Armenia	Locations	Sebastian Raubach	1	
☐	9	Australia	Locations	Sebastian Raubach	5	
☐	10	Austria	Locations	Sebastian Raubach	1	

🗑 Delete group   ⊞ Add group   A

Group members All accessions

Is public?
Yes   B

	Id	GID	Accession Name	Number	Collector Number	Genus	Species	Subtaxa	Latitude	Longitude	Elevation [m]	Country of origin	Collection date	☐
☐	1	ACC-1	CACTUAR-1	Prickly Pete	VLS-767	Cactus	Cactuar		26.18	91.73	44	India	12/03/2013	☐
☐	2	ACC-2	CACTUAR-2	Spiky Steve	PAT-337	Cactus	Cactuar		-33.86	151.21	37.98	Australia	20/11/1959	☐
☐	3	ACC-3	CACTUAR-3	Spiny Shaun	XME-467	Cactus	Cactuar		35.69	-0.64	109.97	Algeria	14/02/1988	☐
☐	4	ACC-4	CACTUAR-4	Acanthoid Al	DUL-555	Cactus	Cactuar		30.20	67.01	1,681.96	Pakistan	07/10/1974	☐
☐	5	ACC-5	CACTUAR-5	Aculeate Anna	SNW-759	Cactus	Cactuar		36.06	103.79	1,546.23	China	03/04/2004	☐
☐	6	ACC-6	CACTUAR-6	Barbed Beth	EEH-398	Cactus	Cactuar		36.30	59.61	982	Iran (Islamic Republic of)	08/08/2005	☐
☐	7	ACC-7	CACTUAR-7	Briery Bruce	JKC-326	Cactus	Cactuar		28.67	77.43	215.46	India	23/01/1992	☐
☐	8	ACC-8	CACTUAR-8	Bristly Barbara	SKS-889	Cactus	Cactuar		38.41	27.14	121.05	Turkey	30/11/1975	☐
☐	9	ACC-9	CACTUAR-9		YLF-787	Cactus	Cactuar		41.85	-87.65	178.69	United States of America	17/05/1984	☐
☐	10	ACC-10	CACTUAR-10		RMB-723	Cactus	Cactuar		22.99	120.20	21.46	Taiwan, Province of China	24/08/1963	☐

🗑 Delete members   🔍 Search members   ⬆ Upload members   C

Figure 4: The groups page has many ways in which you can manipulate existing groups and create new groups. The top table shows all the groups that are visible to the current user. The bottom table shows the members of this group, i.e. the database items that are part of it; depending on the type of the group, this can be either *accessions*, *markers* or *locations*. (A) Groups can be added and deleted by clicking on the buttons located just below the groups table. Deleting groups requires the checkbox of the corresponding table row to be selected. (B) The group visibility can be changed by toggling this switch. A public group is visible to every user whereas an invisible group is only visible to the owner. (C) Group members can be added and removed by clicking on the buttons below the group member table.

current user can see. New groups can be added and existing ones deleted by pressing the buttons below the groups table (Figure 4A). Deleting a group requires you to select the checkbox in the corresponding table row as well as to have sufficient permissions to do so. When creating a new group you will be asked to select the group type and to decide on a name for the group. When you do so, the group will be associated with your user account.

Once this is done, the group will be created and Germinate will automatically select it and show the group members table (empty at this point) below the groups table. You can now manipulate the group itself by adding and removing members using the buttons below the table as shown in Figure 4C.

Groups can be made public so that other users have the option to use them as well. If you decide to make your group public, toggle the switch button shown in Figure 4B.

More info here

3.2.2 Marked item lists

Another useful feature of Germinate is the concept of *marked item lists*. A marked item is either an accession, a marker or a location that is of interest to the user. While you are browsing the page, a lot of the tables will have a checkbox column as the last column which you can use to

(A) Dropdown

(B) Page

(C) Context menu

Figure 5: The marked item lists keep track of items of interest. (a)

mark certain items. Germinate will keep track of these items for you.

To see how many items you currently have marked, you can click on the menu item as shown in Figure 5A or go directly to the marked item lists page that is shown in Figure 5B.

Once you have marked all the items that you are interested in, you can create a group of these items and use them to export data against them. To create a group, you can either go to the marked item lists page or by clicking on the header of the checkbox column and selecting "Create group from selection" (see Figure 5C).

3.3 Help

4 Data Types

4.1 Passport Data

4.2 Genotypic Data

4.3 Phenotypic Data

4.4 Climate Data

4.5 Chemical Compound Data