

Database practicum database manager

Manual for administrators

Pearls of Computer Science

Pearls of Computer Science

You have credentials for this course

To use the database, connect to utwente.nl using these credentials:

Username and DB name:

dab_Pearls_of_Computer_Science_20

Password:

YDwDhw4LJAHxQNqD

Example command for connecting:

```
psql -h utwente.nl -U dab_Pearls_of_Computer_Science_20  
dab_Pearls_of_Computer_Science_20
```

Delete database and release credentials

Reset database

Get dump of database

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Introduction

This manual is meant for users of the Database Administration Bundle (DAB). This manual will cover all functions which can be used inside of DAB. This manual will handle the functions page for page. The first section will describe the general structure of the site. In the remaining sections the functions per page will be explained. At the end a FAQ is included. In order to use DAB to its full potential it's advisable to read this FAQ. This manual will provide screenshots of DAB used on a desktop. For a mobile phone, the site structure will look slightly different. Apart from some minor visual differences the functions will behave exactly the same.

Welcome Screen

After a successful login an administrator will be presented with the following view:



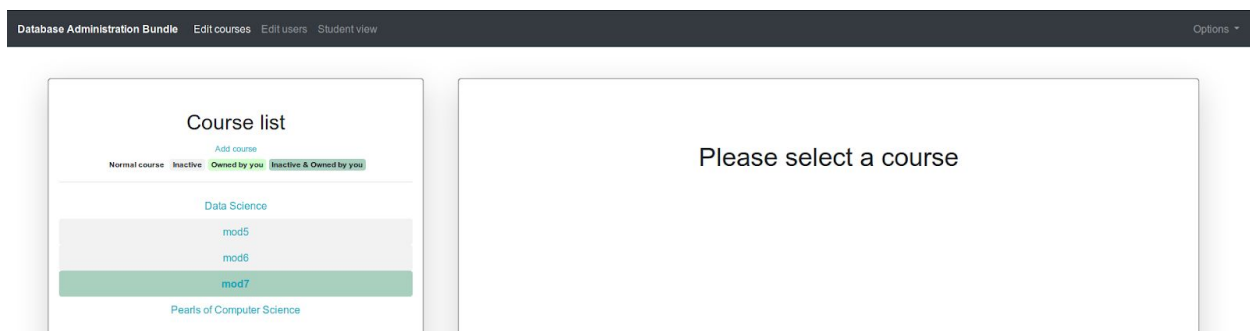
The different pages within DAB can be seen on top of the startpage, namely: Edit courses, Edit users and the Student view page. At the top right is a “options” button with some additional functions.

In short every page contains the following functionality:

- **Edit courses:** This page is also accessible for a teacher and can be used to manage courses. Tasks like creating courses or adding a TA to a course can be managed on this page. Further information can be found in the “edit courses” section.
- **Edit users:** This page can only be accessed by a user with administrative rights within DAB. On this page user can be managed. Like adding a new user to the system or removing a user of DAB. Further information can be found in the section “edit users”.
- **Student view:** This view is visible to every user with at least a student role. On this page databases can be created. Database creation is normally done by a student, but a teacher or administrator can also create a database this way. Further information can be found in the section “student view”.

Edit Courses

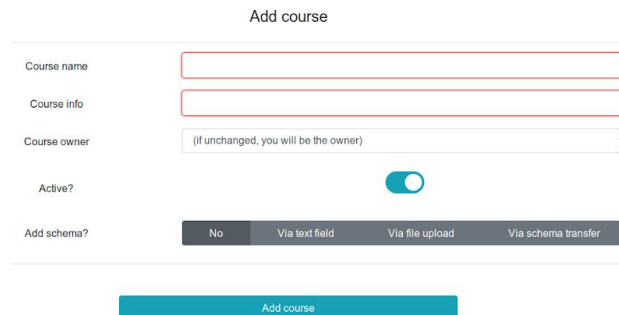
When the user clicks the “edit courses” button in the top menu an overview similar to the following will appear:



The view is divided into a left and a right part. On the left is a list with courses. Above the list with courses is extra information provided about the color coding in the list. In short the colors have the following meaning:

- **Normal course:** in this case the course will not have any color. The course is active, but is not owned by the currently logged in user.
- **Inactive:** The course is not active. This means that the course is known inside of DAB, but a student can not yet see this course. This can be convenient in case additional information is provided later in time or to make the course visible to the student at a specific moment in time. This will give the row a light gray color. **Important: although possible, it is not advised to activate the course during a course and let students create databases all at the same time. The best way is to request a database creation via a canvas notification. This will give the best experience for both the student and teacher.**
- **Owned by you:** this course belongs to the currently logged in user. For a teacher this means changes can be made. An administrator can make changes in any case. This will give the row a light green color.
- **Inactive & owned by you:** if the currently logged in user is owner of this course, but the course is not yet visible for students. This will give the row a dark green color.

On the top of this list is a button to add additional courses. Clicking this button will provide the user with a simple to follow instructions on how to add a course. These instructions will look similar to the following view:



The screenshot shows a web form titled "Add course". It includes the following elements:

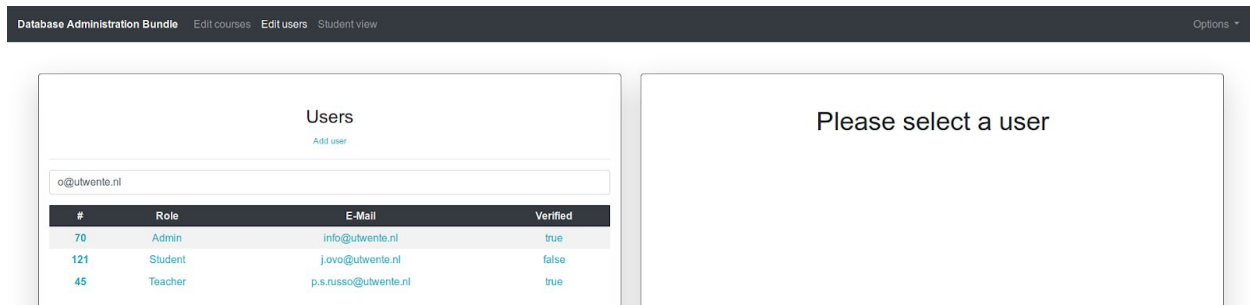
- Course name:** A text input field.
- Course info:** A text input field.
- Course owner:** A dropdown menu with the text "(if unchanged, you will be the owner)".
- Active?:** A toggle switch currently turned on (blue).
- Add schema?:** A group of four radio buttons: "No", "Via text field", "Via file upload", and "Via schema transfer".
- Submit button:** A large blue button labeled "Add course" at the bottom.

An administrator will have an additional option to set the owner of the course. For a teacher this option will not be visible and will automatically be set to the currently logged in user. The active button is convenient in cases where the course should exist already, but not yet visible for students. When set to inactive the course will not be visible for a student, but a teacher or TA of this course will be able to change course settings. An important part of the course creation is the schema part at the bottom. This option can be used to set the structure of the database when the student creates a new database and possibly populate the databases with preset data. There are four options to choose from:

- **No:** this option will give the student an empty database. There will be no tables or any preset data present.
- **Via text field:** Using this option will give the user an extra field where the PostgreSQL code can be inserted directly. This is mostly convenient for a small setup. Larger and more complex database structures can be setup in this way, but is not recommended.
- **Via file upload:** an existing sql dump can be uploaded with this method. Every newly created database by the student will have the information as setup inside of the sql dump.
- **Via schema transfer:** this option can be used to transfer the schema from an existing database. This option is convenient in case the teacher creates a new iteration of the same course every year. In this case a new course can be created with an already existing schema structure.

Edit users

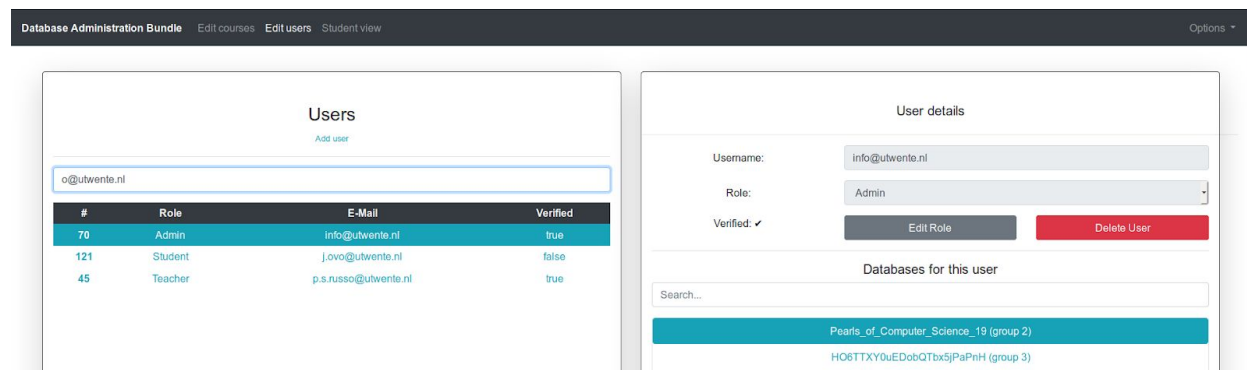
Editing users is an option only available to administrators. After clicking this option in the upper menu an overview similar to the following will appear:



The overview is divided into two parts. On the left is a list of users. On top of the list is an option to add additional users directly. This is most useful when adding new teachers or administrators. A student can create an account directly through DAB itself. After following the instructions an email will be sent to the new user. Keep in mind that the mail address should be a valid university email address and no other. An administrator can also filter on the mail address. In the picture above a search is made on “o@utwente.nl”. The right part of the screen will provide a complete overview of the user selected on the left.

The list on the left will give basic information about every user. The ID next to every user is the ID used inside of the database. The verified field will give an indication whether or not the user has verified its mail address via a link received from DAB.

When a user is selected the view on the right will look similar to the following image:



An administrator will be able to change the role of the user. This function is useful in the case when a teacher has created a new account through DAB itself and currently has a student role. Beneath these user details is a list of all the databases created by this user. After selecting one of these databases additional information will be loaded beneath the database list. This information will look similar to the following image:

Database ID:	188
Database name:	Lnqhohm1WT8PIC2OQNEV3Pr
Username:	Lnqhohm1WT8PIC2OQNEV3Pr
Password:	OQmHKbtVle1AaIXNSfKF0Zi6SplsV9Xo5lcFuevDqzJh
Group ID:	0
Owner ID:	73
Course ID:	12
Course name:	mod5

[Download dump](#)
[Reset database](#)
[Delete database](#)

The functions below the additional information are the same functions a student can perform on its own databases and are further explained in the *student view* part below.

Student view

A teacher or administrator is presented with the following view when clicking the student view button at the top menu:

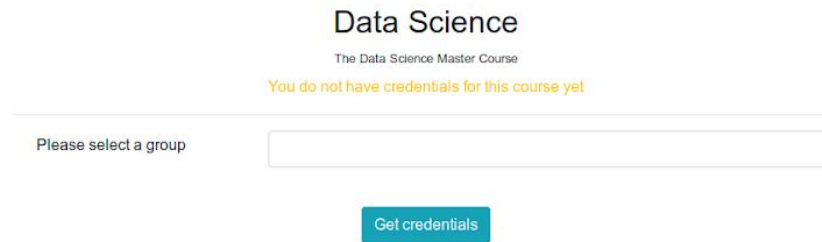
The screenshot shows the 'Student view' interface. At the top, there is a navigation bar with 'Database Administration Bundle', 'Edit courses', 'Edit users', and 'Student view'. On the left, there is a 'Course list' section with a legend: 'No credentials' (grey), 'You have credentials' (light green), 'Inactive' (dark green), and 'Inactive & You have credentials' (light grey). Below the legend, there is a list of courses: 'Data Science' (light green), 'mod5' (light green), 'mod6' (light green), 'mod7' (light green), and 'Pearls of Computer Science' (light green). On the right, there is a large box with the text 'Please select a course'.

The view is split in two parts. On the left is an overview of all the courses a student can sign up for. On top of the list is an indication what different colors mean. The following list gives an explanation of the different colors:

- When the course has no color the user does not have a database yet for this course.
- When the course is light green the user already has a database for this course.
- When the course is dark green the user has a database for this course, but the course is not active. This can be convenient to test a database without actually presenting the course to the students yet.
- When the course is light grey the course is simply inactive and no database is active on the server under this username.

Any additional information about a database is presented in the right part of the screen.

When a user clicks a course without any color the following screen is presented.



Data Science

The Data Science Master Course

You do not have credentials for this course yet

Please select a group

Get credentials

A student first has to provide a valid group number in the course. This group number will be used by the teacher or TA to assist during the course. A teacher or administrator can use any number.

After the user clicks “get credentials” DAB will generate a database with credentials for the user. The course will become light green in the left plane and an overview of the database will show up on the right. This overview will look similar to the following image:



mod7

test

You have credentials for this course

To use the database, connect to thebias.nl using these credentials:

Username and DB name: dab_mod7_0

Password: ABSzxbJRA47ljZMH

Example command for connecting: psql -h thebias.nl -U dab_mod7_0 dab_mod7_0

Delete database and release credentials

Reset database

Get dump of database

This overview will give the user a few options and essential information about the database itself. The username and name of the database are identical and are shown in the first row with the password of the database in the next row. A CLI command to connect to the database is provided in the next row. Make sure that psql is installed before using this command.

A user has 3 different options below the essential information. The buttons will perform the following functions:

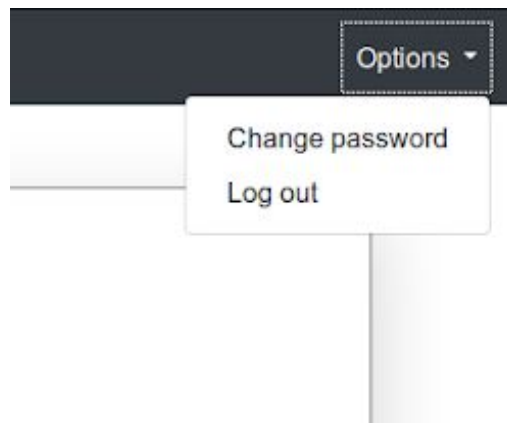
- **Delete database and release credentials:** Clicking this button will delete the database **including** all its content. The database will no longer exist on the server. Use this option with caution. A user will be asked for confirmation before proceeding.

- **Reset database:** The teacher will have setup a default structure of the database when creating the course. A user can revert back to the beginning state by clicking this button. All additional changes made by the user of the database will be gone, though the database will still exist with the default structure and content.
- **Get dump of database:** This button will create a sql dump file. This file will contain the complete structure and all the data of the database. This function can be used to locally recreate the database. Information stored on the local version will in no way synchronize any data with the database running on the server. All changes made locally will stay locally.

Options

Change password

In order the logout or change your password the option button in the top right corner can be used, as is seen in the following image:



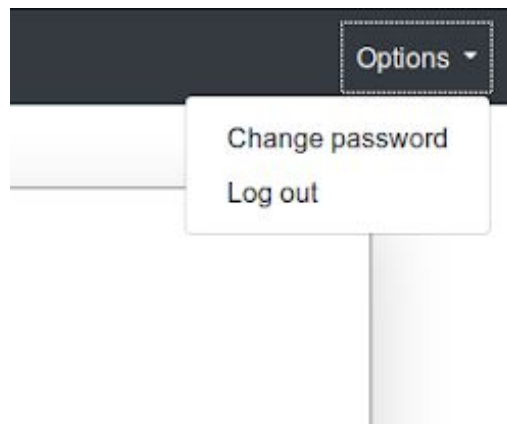
Depending on the type of user more options may be available here. Clicking the change password button will bring up a new screen similar to the following screen:

A screenshot of a 'Change password' form. The form has a title 'Change password' at the top. Below the title are three input fields: 'Current password', 'New password', and 'Confirm new password'. Below these fields is a small line of text: 'Please use a password that has 8 characters or more, and contains at least one lowercase letter, one uppercase letter, and one number'. At the bottom of the form is a blue button with the text 'Change password'.

Simply follow the instructions on the screen and click “change password”. A new password will be set for this user.

Log out

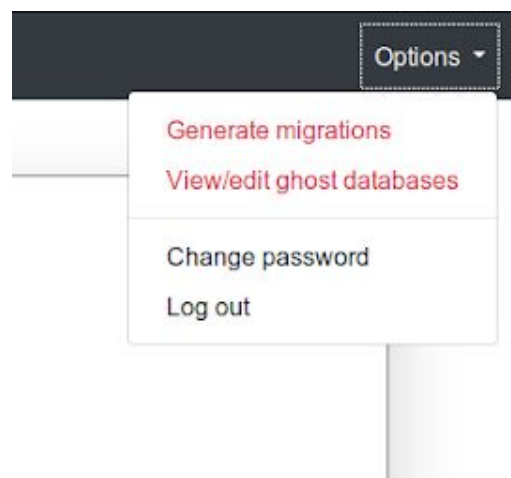
In order to log out the “log out” button can be used in the options drop down menu in the upper right corner, as is seen in the following image:



Generate migrations

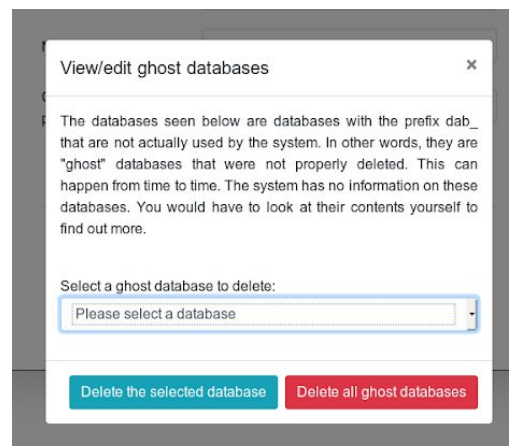
Use this function with caution, administrator credentials may be included in the generating file

This function is included in the options menu in the upper right corner (see the image below). After a confirmation popup a shell script is created. This script can migrate all databases in the system. The location of this shell script will be shown after it has been generated. The created script has to be run *manually*.



View/edit ghost databases

This function can be accessed in the top right corner under the options button. Every database created within DAB has a prefix. At the time of writing this prefix is “dab_”. In some cases a database is still active on the server, though the application DAB does not know anything about them. These databases can be deleted individually or all at once. The popup presented to the user after clicking the “View/edit ghost databases” in the options menu will look similar to the one below.



FAQ

What is DAB?

DAB is a database manager. Students can create a database for a course which is created by the teacher. The student can study the provided material in the course and can use the database as described by the teacher. By the use of the database the student will gain a deeper understanding of a database and how to use them.

Can any email address be used?

No, only an email provided by the university can be used in conjunction with DAB

Can I use the database for a production environment?

No, the database is only meant to be used inside of a course given at the University. A student is allowed to use a database for a personal project, however this is not advised. An administrator or teacher is able to delete any stored data at any given moment in time.

Who can use DAB?

DAB is meant for students and university personnel at the University of Twente.

I am no longer able to access my database and the database is no longer visible inside of DAB, what can I do?

Due to the lifecycle of a course a teacher can decide to delete the course including all the databases. Depending on the teacher the database may still be inside of a backup. If this is the case the teacher has the ability to put back the database (including all its content). Please, ask your teacher of the course in question for more information.

The database was not accessible during the night, but during the day it seems to work again. How is this possible?

*The server containing the database may be doing some administrative tasks during the night. Therefore it is advisable to **not depend on the database during the night**. Therefore, students should not make last minute alteration during the night.*

I am a student, how can I sign up?

*A student can access the site directly. On the site a “register here” button is provided to create a new account. The site will guide you through the process. **Only an email address provided by the university is allowed.***

I am a teacher at the University of Twente and would like to use DAB for my students, but don't have an account. how can I sign up?

There are 2 ways to obtain a teacher account within the DAB application. The first is to contact an administrator of DAB directly asking for an account (a valid University of Twente mail account is required). The second option is to create a student account on the URL where DAB is hosted and request teacher privileges from one of the DAB administrators (either by mail or in person).

Beside database management does DAB provide management over other pieces of software?

At this moment in time DAB only supports database management. Other pieces of software may be added in the future.

What type(s) of relational database management systems (RDMS) does DAB support?

*Right now only **PostgreSQL** is supported. Other types may be added in the future.*

What devices does DAB support?

DAB is a web application that can be used on both desktops and mobile phones. The website will automatically detect the type of device and scale to the screen size.