University Database

Made by Bartosz Pasiecznik

Project Overview

This project is a Web MVC application made for a basic University management. Functionality consists of operations on Students, Instructors, Courses and Departments as well as user registration and authentication.

Used Technologies:

- ASP .NET Core 8.0
- Entity Framework Core
- Microsoft SQL Server

Setup

To use this application, you should have a SQL server set up. For this project I used a dockerized container of this server: https://hub.docker.com/r/microsoft/mssql-server.

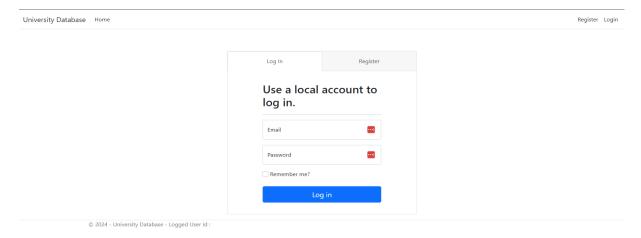
After setting up the SQL server open the UniversityDB project in Visual Studio 2022 and edit *appsettings.json* by inputting your SQL Server address, User ID and Password in *DefaultConnection*.

Now we need to create a database and apply project migrations. In PowerShell, while being in the project folder input the following commands:

dotnet ef database update --context SchoolContext dotnet ef database update --context AuthDBContext

Those commands will initialize the database in your SQL Server. Now we are ready to build and run the project. The database if empty will be automatically seeded with data.

After running the project you will be greeted by a login screen



You can register your account and set your own role or use a provided account to test functionality with every role. Implemented roles are:

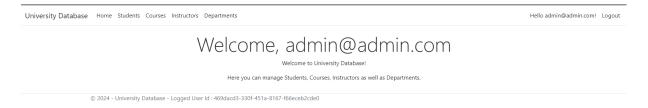
- Admin
- Instructor
- Student

Each role has their own permissions that will be explained later.

To login into a provided account input the following credentials:

Role	Login	Password		
Student	student@test.com	Student!23		
Instructor instructor@test.com		Instructor!23		
Admin	admin@admin.com	Admin!23		

After logging in, you will be greeted by the homepage.



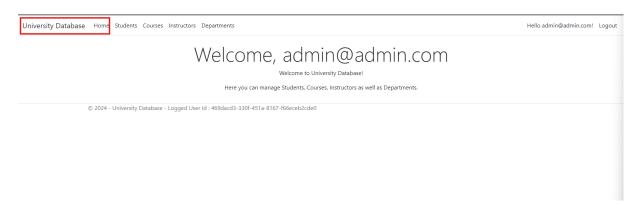
From there you are able to freely navigate the page.

Application Functionality

In this section I will describe the application functionality as well as the roles that are permitted to perform those functions.

1. Home Page

To enter the Home Page, press the University Database or Home buttons in the top left corner of the screen.



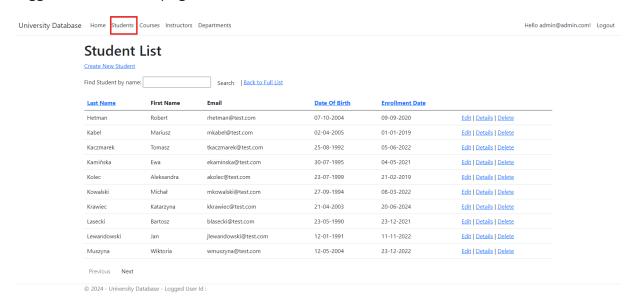
This action can be performed by every logged in account.

2. Student tab

In the student tab you are able to:

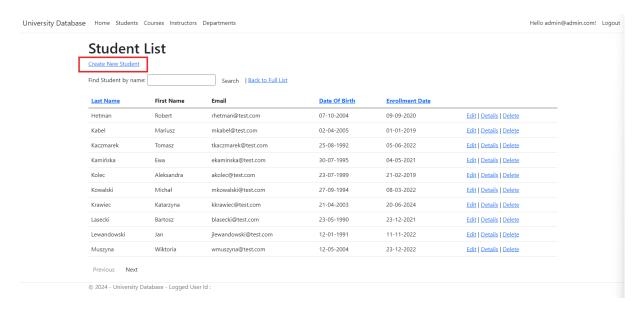
a) View all added students

To view added students simply click the Students button on any screen. You have to be logged in to view this page.



b) Create new students

To create new students simply click the Create New Student button. To do this you need to log in to an account with Instructor or Admin role.



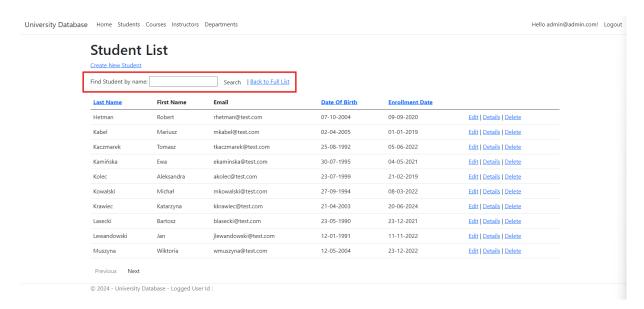
After clicking the button you will be asked to provide student information as well as enroll the student in classes.

Create Student

First Name			
Last Name			-
Last Name			
Email			
Email			
Date of birth			
dd.mm.rrrr			Ċ
Enrollment Date			_
dd.mm.rrrr			-
Courses Enrolled	Lles		
Courses Enrolled	In	□ 1073	
□ 1045 Calculus	□ 1050	Creative	
2021 Composition 2468 Linear Algebra 3141 Trigonometry 4022 Microeconomics	Chemistry	Writing	
		□ 1357	
□ 1098 Data	☐ 1235 Ancient	Introduction	
Structures	Civilizations	to	
		Engineering	
□ 2024	□ 2042	□ 2378	
	2042	Database	
Composition	Literature	Systems	
□ 2469 Linear	□ 3067	□ 3124	
	Algorithms	Physical	
Algebia	Algorithms	Chemistry	
□ 3141	3347 Quantum	□ 3541	
Trigonometry	Physics	Poetry	
□ 4022	□ 4041	□ 4280	
		Classical	
		Mechanics	
□ 4563	☐ 4837 Modern	□ 5074 World	
Operating	History	History	
Systems			
☐ 5319 Finance	□ 5610	☐ 6285 Cell	
	Astrophysics	Biology	
□ 6423	□ 6745	□ 6789	
Marketing	Biochemistry	Abstract	
Principles		Algebra	
	☐ 7584 Business	□ 8321	
☐ 7432 Genetics	Management	Organic	
	□ 0074	Chemistry	
☐ 8642 Fluid	☐ 8971 Environmental	☐ 9274	
Mechanics	Science	Medieval	
□ 9587	Science	History ☐ 9870	
Inorganic	9753	Software	
Chemistry	Thermodynamics	Development	
□ 9876		_ 21 e.e pilielit	
Differential			
Equations			
Create			
CTEALE			

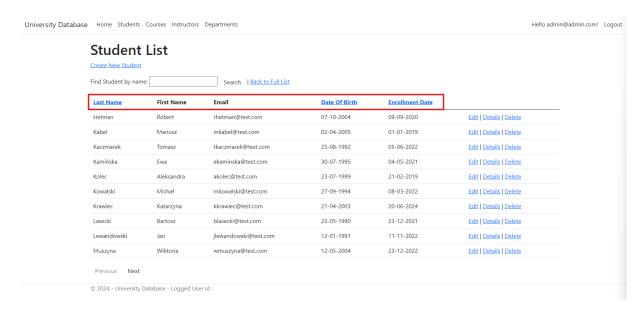
c) Find them by name

To find a student by First or Last name, simply input the name in the marked input spot and click Search.



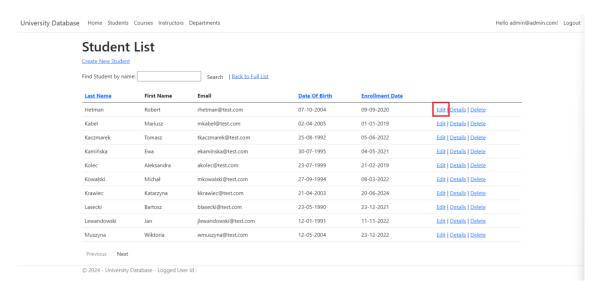
d) Filter by Last Name, Date of Birth or Enrollment Date

To filter the students, click the blue column name to sort ascending or descending by the selected value.



e) Edit student details

To edit student details you need to be logged into an account with an Instructor or Admin role. Click the Edit button next to the student that you wish to edit.

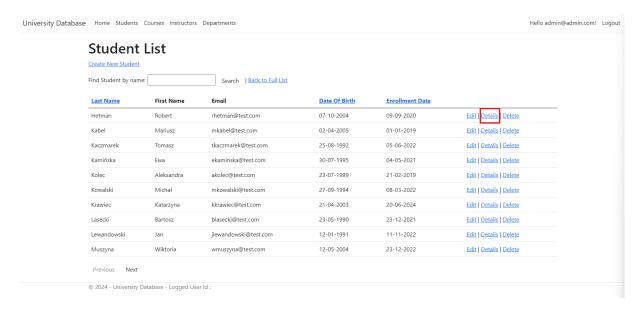


After clicking the button you will see a similar menu to the Create Student page. Here you can edit the student details.

Edit Student First Name •••1 Robert Last Name Hetman 07.10.2004 Enrollment Date 09.09.2020 Courses Enrolled In □ 1045 Calculus □ 1050 Chemistry Creative □ 1098 Data □ 1235 Ancient Introduction Civilizations □ 2021 □ 2042 Database Composition Literature □ 3124 □ 2468 Linear □ 3067 Algorithms Algorithms Chemistry 3347 Quantum 3541 Trigonometry Physics Poetry Microeconomics Macroeconomics Mechanics Operating History Systems ☑ 5319 Finance Astrophysics ☐ 6285 Cell Biology □ 6423 □ 6789 □ 6745 Marketing Principles ☐ 7432 Genetics ☐ 7584 Business Management □ 8971 □ 9274 ☐ 8642 Fluid □ 9587 □ 9870 □ 9753 Inorganic Chemistry 9876 Differential Equations Back to List

f) View student details

To see the student details, click Details next to the desired student.



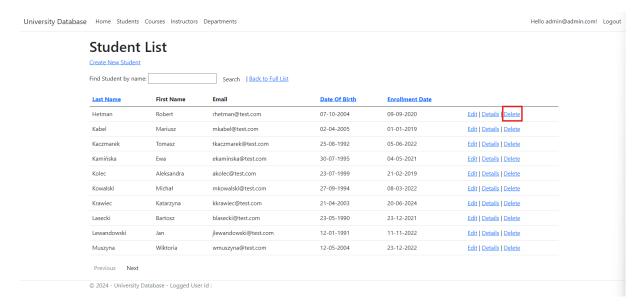
After clicking the button, you will see a page with the selected students' details.

Student Details

First Name	Robert	
Last Name	Hetman	
Email	rhetman@test.com	
Date of birth	07-10-2004	
Enrollment Date	09-09-2020	
Enrollments	Course Title	Grade
	Microeconomics	С
	Macroeconomics	В
	Finance	А

g) Delete a student from the database

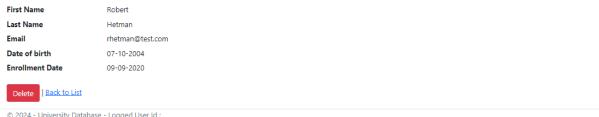
To delete a student from the database you need to be logged in as an Instructor or an Admin. Click Delete next to the student you wish to delete.



After that you will see a confirmation screen.

Delete

Are you sure you want to delete Robert Hetman?

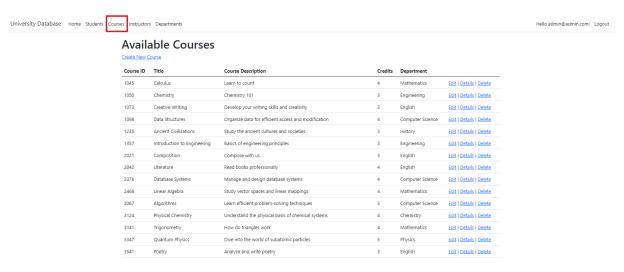


3. Courses tab

In the courses tab you are able to:

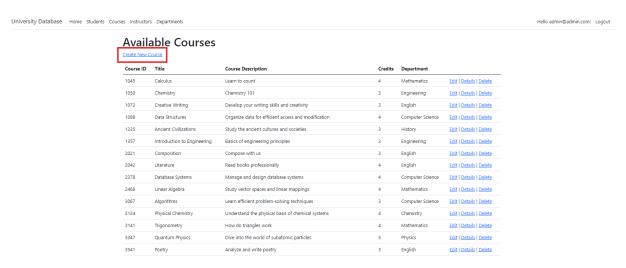
a) View all added courses

To view added courses simply click the Courses button on any screen. You have to be logged in to view this page.



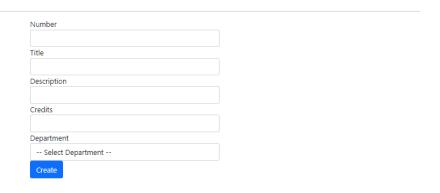
b) Create new courses

To create new courses simply click the Create New Course button. To do this you need to log in to an account with Instructor or Admin role.



After clicking the button you will be asked to provide course information like Course Number, Title, Description, Credits and Department assigned to the Course.

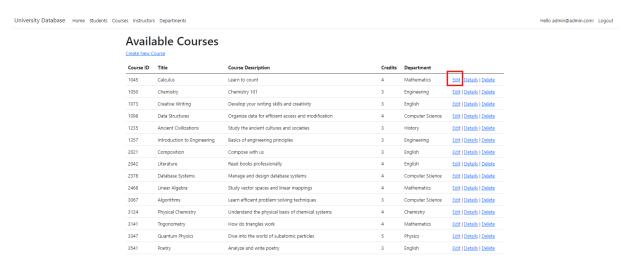
Create New Course



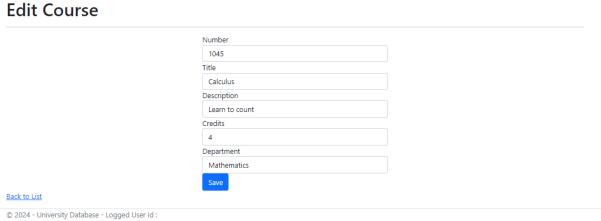
Back to List

c) Edit course details

To edit course details you need to be logged into an account with an Instructor or Admin role. Click the Edit button next to the course that you wish to edit.

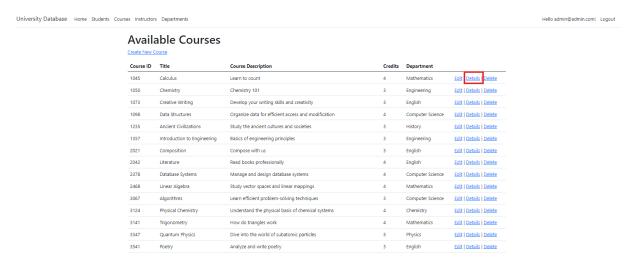


After clicking the button you will see a similar menu to the Create Course page. Here you can edit the course details.



d) View course details

To see the course details, click Details next to the desired course.



After clicking the button, you will see a page with the selected courses details.

Course Details

Calculus	
Number	1045
Title	Calculus
Description	Learn to count
Credits	4

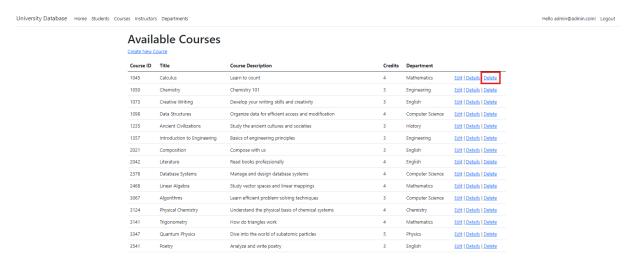
Mathematics

Department

Edit | Back to List

e) Delete a course from the database

To delete a course from the database you need to be logged in as an Instructor or an Admin. Click Delete next to the course you wish to delete.



After that you will see a confirmation screen.

Delete

Are you sure you want to delete Calculus course?

 Number
 1045

 Title
 Calculus

 Description
 Learn to count

 Credits
 4

 Department
 Mathematics

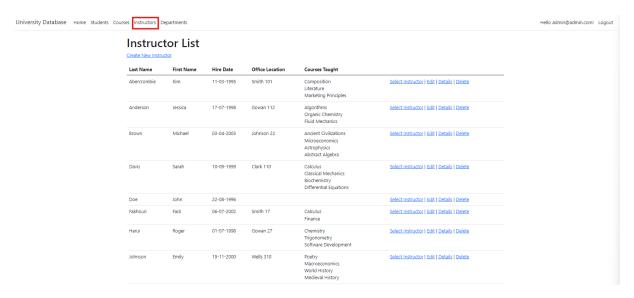


4. Instructor tab

In the Instructor tab you are able to:

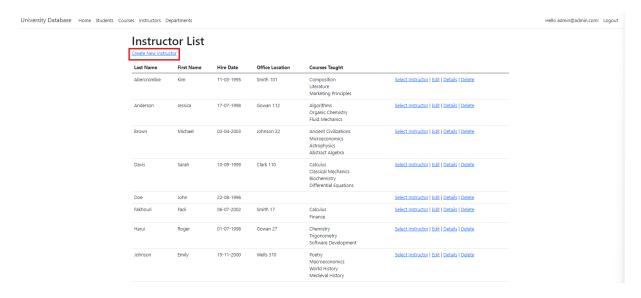
a) View all added instructors

To view added instructors simply click the Instructors button on any screen. You have to be logged in to view this page.



b) Create new instructors

To create new instructors simply click the Create New Instructor button. To do this you need to log in to an account with Admin role.



After clicking the button you will be asked to provide instructor information like Instructor first and last name, Hire date, Office location and Courses taught by the instructor.

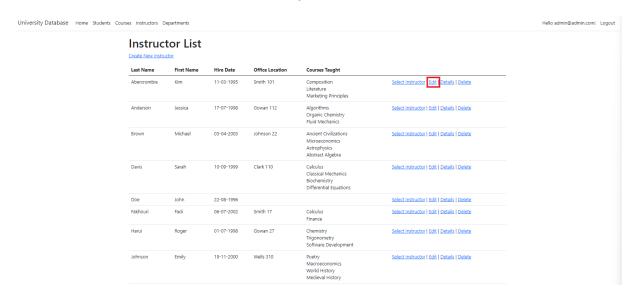
Create New Instructor



Back to List

c) Edit instructor details

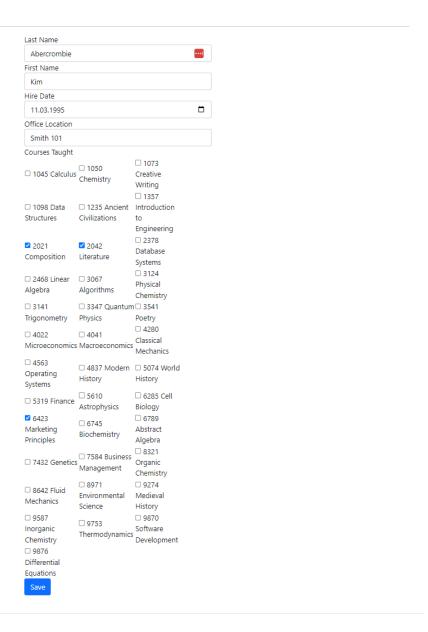
To edit instructor details you need to be logged into an account with an Admin role. Click the Edit button next to the instructor that you wish to edit.



After clicking the button you will see a similar menu to the Create New Instructor page. Here you can edit the instructor details.

Edit Instructor

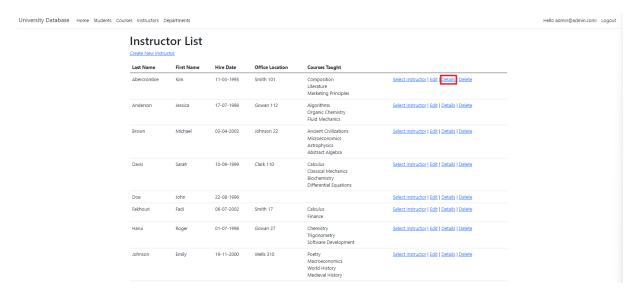
Kim Abercrombie



Back to List

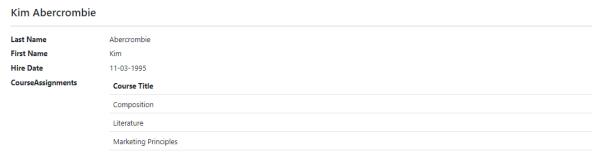
d) View instructor details

To see the instructor details, click Details next to the desired instructor.



After clicking the button, you will see a page with the selected instructor's details.

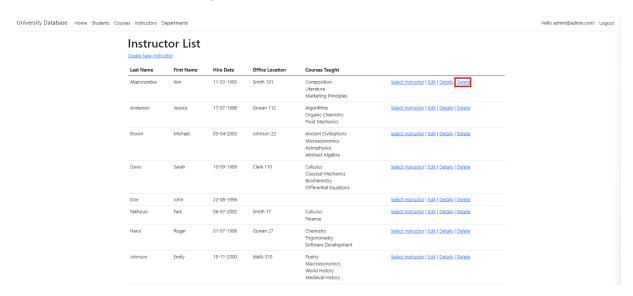
Details



Edit | Back to List

e) Delete an instructor from the database

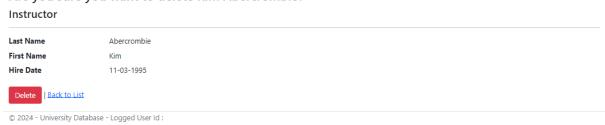
To delete an instructor from the database you need to be logged in as an Admin. Click Delete next to the instructor you wish to delete.



After that you will see a confirmation screen.

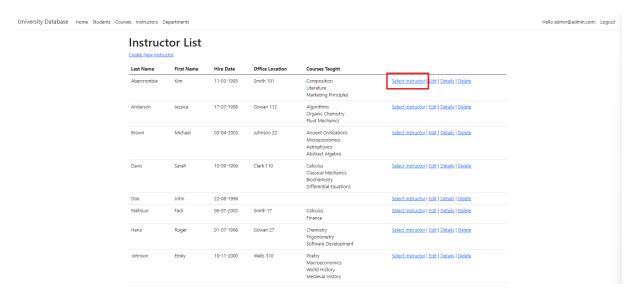
Delete

Are you sure you want to delete Kim Abercrombie?



f) Show courses taught by selected instructor and students enrolled in selected course

To see courses taught by a selected instructor, click the Select Instructor button.



Here you will see a menu showing all the courses that are taught by a selected instructor. To see which students are enrolled in a selected course click Show Enrolled Students.

				oen onology	
Smith	Alice	15-05-1997	Thompson 208	Chemistry Creative Writing Data Structures Modern History	Select Instructor Edit Details Delete
Taylor	James	14-12-2002	Smith 303	Literature Genetics Thermodynamics	Select Instructor Edit Details Delete
Thomas	Robert	23-03-2001		Data Structures Business Management Inorganic Chemistry	Select Instructor Edit Details Delete
Wilson	David	05-06-2005	Wells 105	Linear Algebra Trigonometry Quantum Physics Environmental Science	Select Instructor Edit Details Delete
Zheng	Roger	12-02-2004	Gowan 15	Database Systems Algorithms Microeconomics Macroeconomics	<u>Select Instructor</u> <u>Edit</u> <u>Details</u> <u>Delete</u>
Courses	Taught by S	Selected Inst	ructor		
			Course ID	Title	Department
Show Enrolled	l Students		1050	Chemistry	Engineering
Show Enrolled	Students		1073	Creative Writing	English
Show Enrolled	l Students		1098	Data Structures	Computer Science
Show Enrolled	l Students		4837	Modern History	History

Then you will see all of the students enrolled in selected course, along with the corresponding grade.

Courses Taught by Selected Instructor

	Course ID	Title	Department
Show Enrolled Students	1050	Chemistry	Engineering
Show Enrolled Students	1073	Creative Writing	English
Show Enrolled Students	1098	Data Structures	Computer Science
Show Enrolled Students	4837	Modern History	History

Students Enrolled in Selected Course

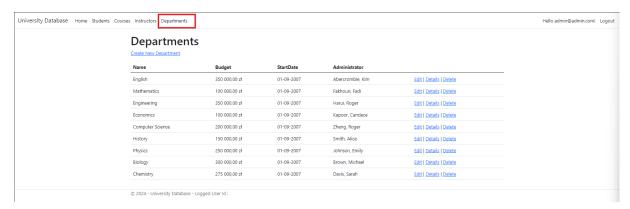
Name	Grade
Wiśniewska, Anna	С

5. Department tab

In the Department tab you are able to:

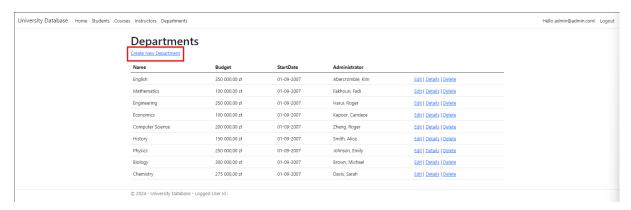
a) View all added departments

To view added departments simply click the Departments button on any screen. You have to be logged in to view this page.



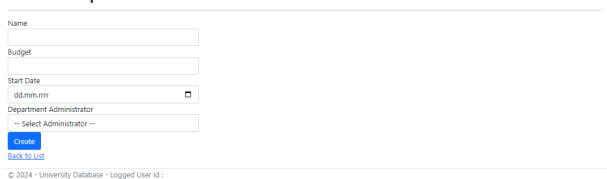
b) Create new departments

To create new departments simply click the Create New Department button. To do this you need to log in to an account with Admin role.



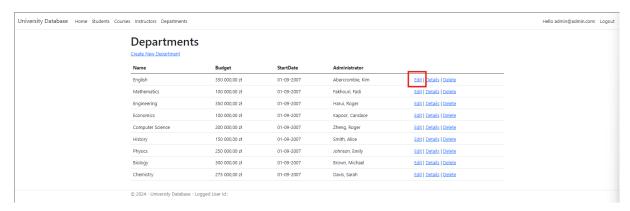
After clicking the button you will be asked to provide department information like Department name, budget, department start date and select a department admin.

Create Department



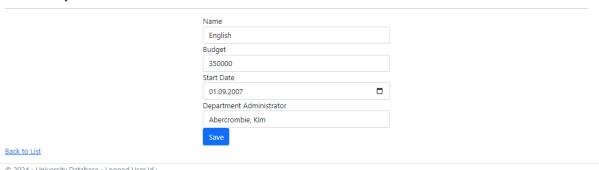
c) Edit department details

To edit department details you need to be logged into an account with an Admin role. Click the Edit button next to the department that you wish to edit.



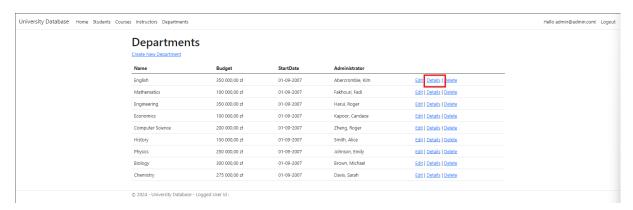
After clicking the button you will see a similar menu to the Create New Department page. Here you can edit the department details.

Edit Department



d) View department details

To see the department details, click Details next to the desired department.



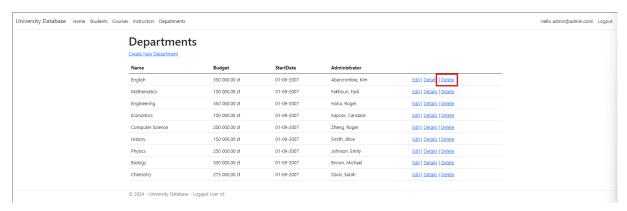
After clicking the button, you will see a page with the selected department's details.

Department Details

English				
Name	English			
Budget	350 000,00 zł			
StartDate	01-09-2007			
Administrator	Abercrombie, Kim			
Edit Back to List				
© 2024 - University Da	atabase - Logged User Id :			

e) Delete a department from the database

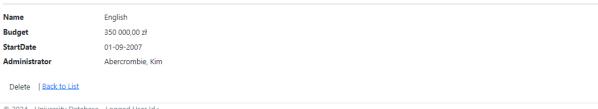
To delete a department from the database you need to be logged in as an Admin. Click Delete next to the department you wish to delete.



After that you will see a confirmation screen.

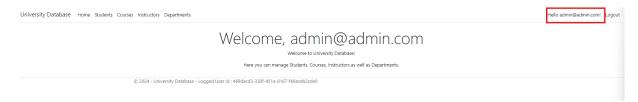
Delete

Are you sure you want to delete English department? Department



6. Manage your account.

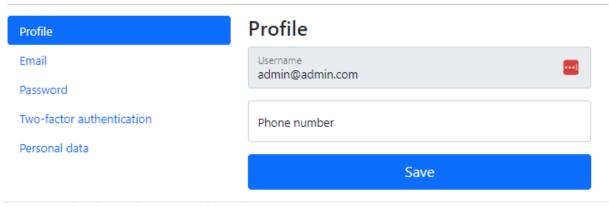
To manage your account, click your e-mail shown in the top right of the screen.



a) Manage your profile

In the Profile tab you can manage your profile information.

Manage your account Change your account settings

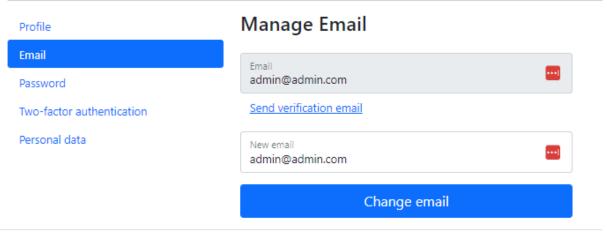


b) Change your email

In the Email tab you can change your email.

Manage your account

Change your account settings



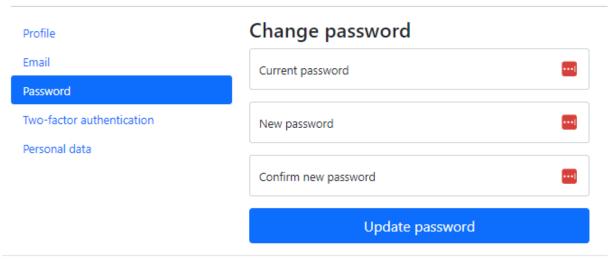
© 2024 - University Database - Logged User Id:

c) Change your password

In the Password tab you can change your password.

Manage your account

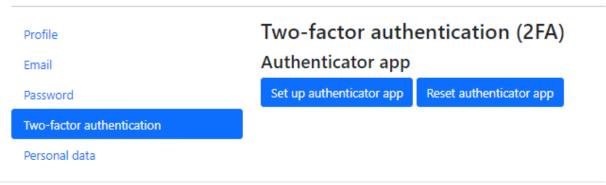
Change your account settings



d) Enable two factor authentication

In the Two-factor authentication tab you can enable 2FA.

Manage your account Change your account settings



© 2024 - University Database - Logged User Id:

e) Download or delete your personal data

In the Personal Data tab you can download or delete your personal data.

Manage your account Change your account settings

