PWSIiP
Państwowa Wyższa Szkoła
Informatyki i Przedsiębiorczości
w Łomży

Państwowa Wyższa Szkoła Informatyki i Przedsiębiorczości w Łomży - PWSIiP

Karabük University

University of Beira Interior

Ahmat Hissen Ali & António José Vaz Baldé

Team Project

Erasmus Students Management System

Łomża

2021/2022

Ahmat Hissein Ali & António José Vaz Baldé

Erasmus Students Management System

Report of the project carried out at PWSIiP, within the scope of the **T**eam Project course, on the creation of an Erasmus students management platform aimed to the International Relations Department.

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This report was **approved** by dr inż. Janusz Rafałko.

Łomża, 2021

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dr inż. Janusz Rafałko

Acknowledgements

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To the Erasmus coordinators of our respective universities, we would like to thank the opportunity that was conceived for us to be part of this experience.

For all professors at the PWSIiP who were always available to help solve any problem, including extra-curricular content.

Finally but not least, a big thanks to Magdalena Zach from International Relations Department, who was always willing to help in contacting the teachers, providing all the necessary information related to attending the classes and providing support in the Dom Studenta Rubikon.

Abstract

This report essentially results in an exhaustive and careful description and reflection, following the various steps taken during the development of the project in question.
First, we were presented with the statement of the work which included the option of carrying out a **Family Tree** if we did not choose to develop something from our own idea. We started to prepare the work environment by installing the programs that would be needed.
In the beginning we tried to focus on teachers as the main administrator of the platform but not forgetting that the it is also for students use. But during the app development we did some changes and we switch the focus to the International Relations Department as the administrator and user of our platform.
As Erasmus students we think it would be useful for teachers to have at their disposal a means of managing temporary students at their disposal and for us students it would be much easier to organize our studies and tasks without having to request to external support to know the class schedules and related stuffs. But also the International Relations Department have the need to arrange everything for the teachers and the students before they arrive to the University.
The base language we use for programming is `C#` in the Visual Studio 2019 Professional Edition desktop environment, the template we chose was Windows Forms App (.NET Framework) with Guna (v.2.0.2.4) as the UI, for the database we used MySQL with PHP MyAdmin as host.

Keywords: ERASMUS. `C#`. Management System. Visual Studio.

Summary

Introduction

The main subject of this project is the development of an Erasmus student management system for the International Relations Department. They can see the list of students that are included in the Erasmus program and in a way not to interfere with the classes that are already defined by the university that are part of a certain course.
This work was carried out at the University of Łomża during the winter semester. As an Erasmus students we understand the difficulties we face to get in contact with the teachers who we believe has no way to separate us from the students who are registered in this university in terms of contact, whenever we need to contact the teachers we send and email and also talk with the person responsible in International Relations Department.
To choose the theme, brainstorming was not necessary because at the time the project was presented to us we were facing the problem of contacting the teacher, so it was relatively easy to choose what we wanted to solve. We were always sending emails to the IRD to ask for help, and we believe that it's not easy for them to see all emails or reply using WhatsApp, sometimes they may not know which courses each student are taking or which teacher to contact.
We already had a basic idea in creating Apps (Windows and WEB) using Forms or Model-View-Controller and performing CRUD Operations in the database and we resorted to online sources for ideas of frameworks to use or even more implementations in our project.
With a system in this context, the staff from IRD would be able to have an overview of all student-teacher relation and it would be easier for them to help.

1 Executive Summary

1.1 Purpose

The first specific problem that motivated us to carry out this work is the need to communicate with our teachers/coordinators of the Erasmus program of which we are members as students. But then we changed our point of view and directed it to the IRD.

We thought of a platform that would help the IRD staff to operate better and they would also help teachers and students to get in contact with each other, we believe that it would be easier and more convenient for both sides.

1.2 General Specifications

The application is desktop based, built in Visual Studio 2019 Professional Edition and for the programming language we chose is `C#`.

For the UI we used **Guna**, because it guarantees faster development and improved productivity and it only requires the minimum for user and system requirements.
The data we enter are stored in a local database, we used phpMyAdmin as the local host.

2 Project Assumptions

2.1 Description

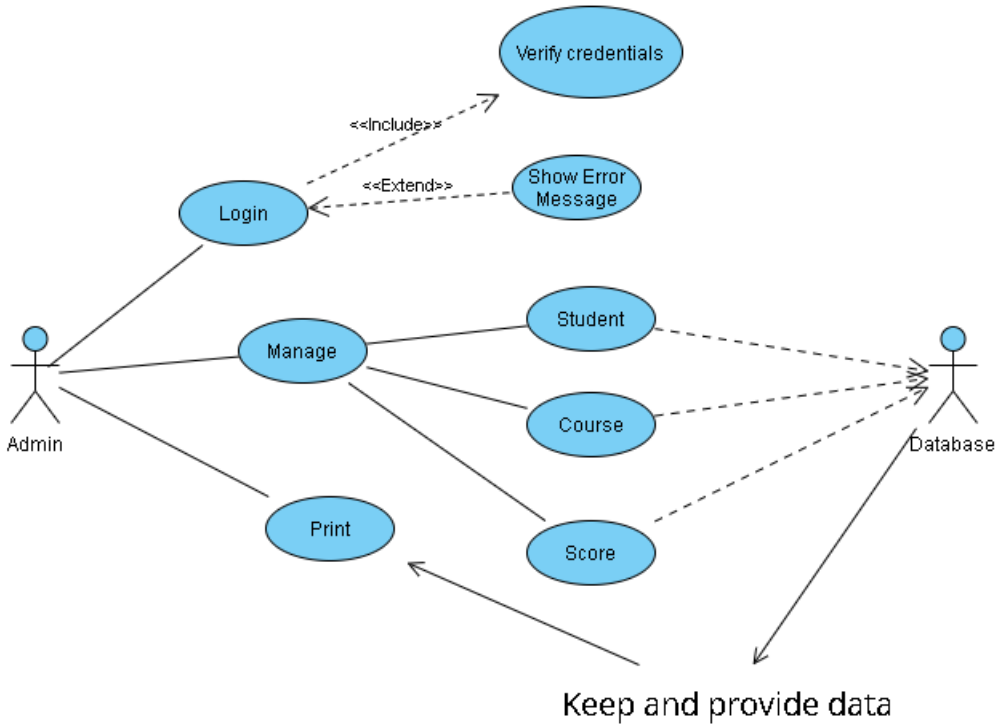
Our system works in the following way: the IRD staff that will use the platform, logs in using their credentials and upon entering, they can carry out the operations that allow them to manage the list of students, their respective scores and courses.

It has the possibility to add, modify the data and also delete the register of both students and courses.
To carry out the program, we followed some online tutorials12345 to implement the codes that allow the realization of CRUD operations and with Windows Forms we designed the interface using the color palette that resembles PWSIiP's.

2.2 Functional Requirements

Functional Requirements	
TITLE/ID	DESCRIPTION
Login Page	This section is where the admin logs into the app
Dashboard	This is the main page, the admin will have a tab on the left side of the screen where he can access to the other section where the managements operations can be done
Student	On this section is possible to perform the CRUD operations based on students data entry.
Course	On this section is possible to perform the CRUD operations based on courses data entry.
Score	On this section is possible to perform the CRUD operations based on the students scores so the data are related to students section.
Print	This is a feature that we added so the admin can export the information to a PDF file.

2.2.1 Use Case Diagram



2.3 Non-functional Requirements

Non-functional Requirements	
TITLE/ID	DESCRIPTION
App Development Cost	The app cost less than 10000€ to develop
Database	All information necessary for the system to operate will be stored in a database.
XAMPP	It makes transitioning from a local test server to a live server possible.
System Security	All API's provided by the system will be secured by requiring the calling party to provide credentials of an authorized user.

3 Methodology

3.1 Division of Work

Responsibilities	
Student	Chapters
Ahmat Ali	2-3-5-6
António Baldé	1-2-4-7

3.2 Timelines

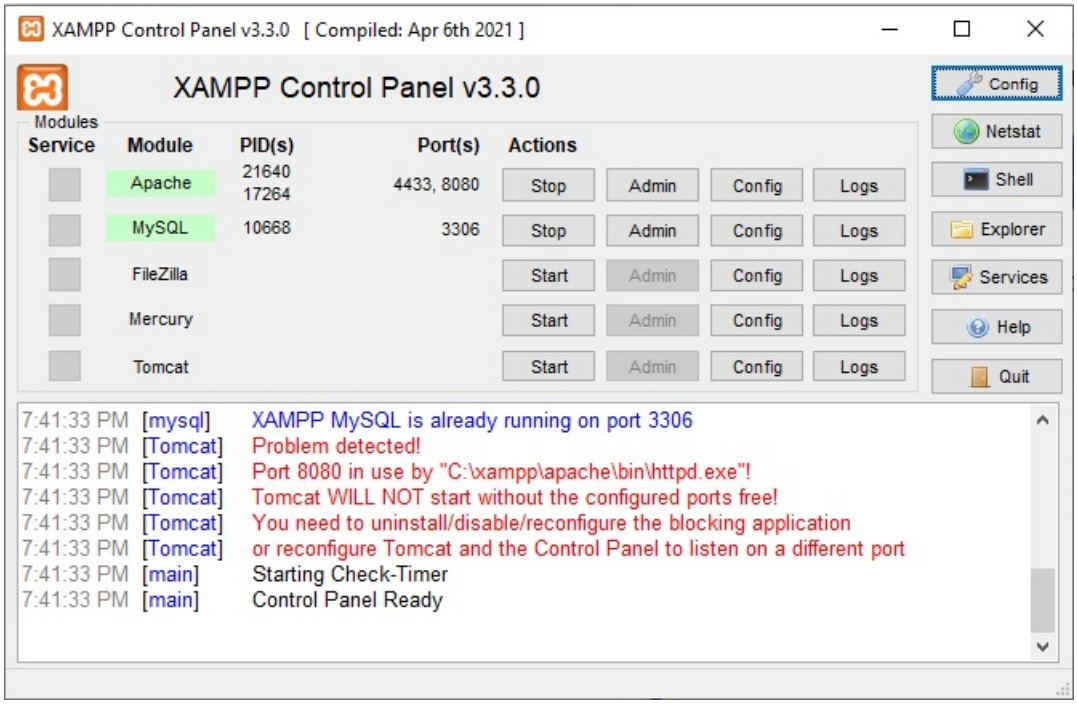
Schedule		
Date	Description	Notes
20.10.2021	Project Briefing	
20.10.2021	Definition of the subject	
25.10.2021	Project scoping	
02.11.2021	Defining Chapters and work division	
05.11.2021	Meeting 1	Failed
06.11.2021	Preparation of the development environment	
11.11.2021	Documentation Sections elaboration	
12.11.2021	Meeting 2	
16.11.2021	App Development - Pt.1	
21.11.2021	App Development - Pt.2	
28.11.2021	App Development - Pt.3	Failed
30.11.2021	Redefinition of the subject	
07.12.2021	Preparation of the development environment	
07.12.2021	App Development - Pt.1 v.2	
17.12.2021	Documentation Review	
18.12.2021	First Submission	
21.12.2021	Documentation Update	
22.12.2021	Project Presentation	
TBA	Meeting 4	
TBA	Meeting 5	

4 System Model

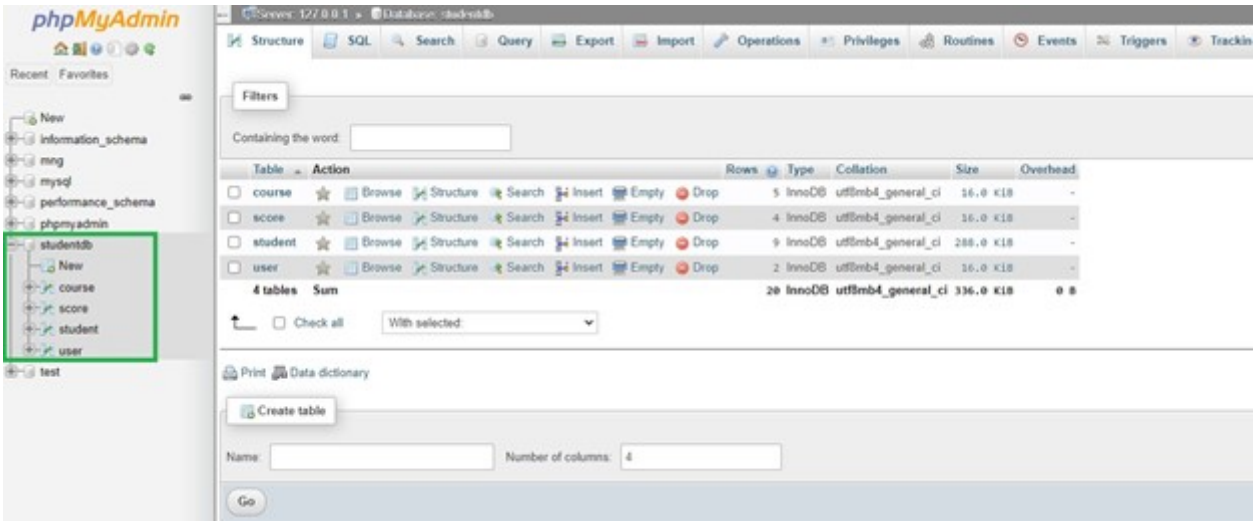
Our goal was to allow the IRD to be able to manage every section with ease, in this case the interface was deployed to be user friendly, the operations are very easy to perform so it even excludes a tutorial for it.
The main techniques used are the efficiency of the CRUD operations, it was successful in every case we tried, so our platform could meet the user expectations and also meet all specified requirements.

4.0.1 Database Connection

After install and run the XAMPP application it will automatically install Apache server and MySQL database. After installing we start running Apache and MySQL.

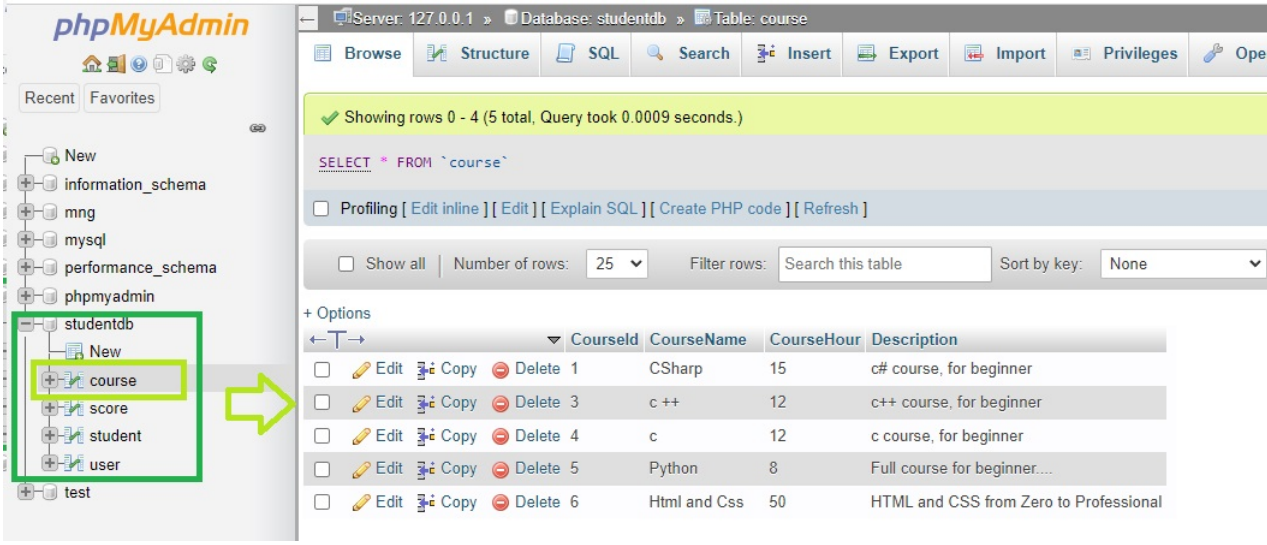


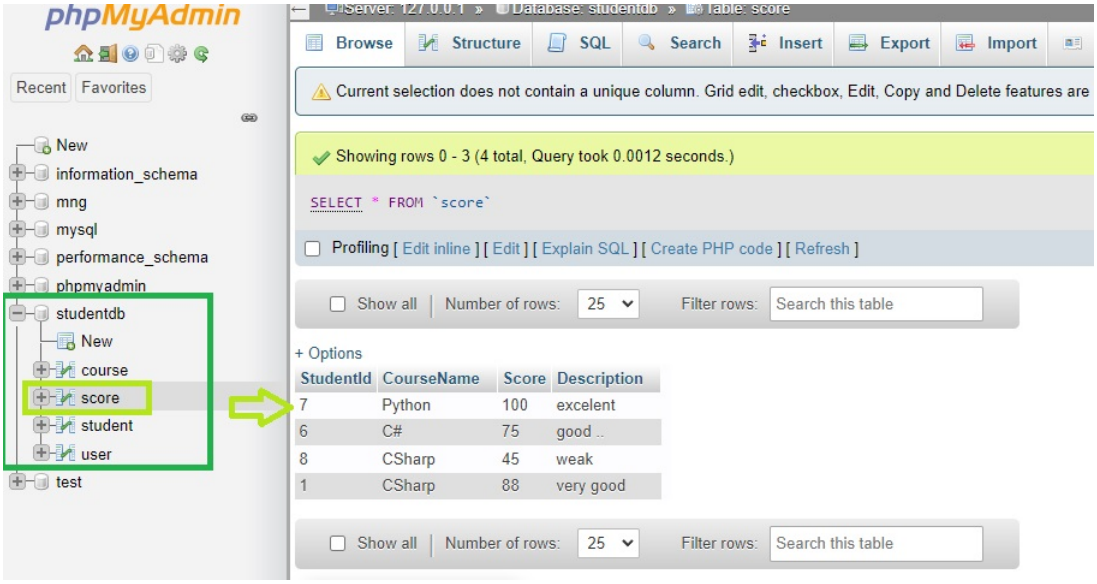
After that, we created a new database on MySQL Admin Page:

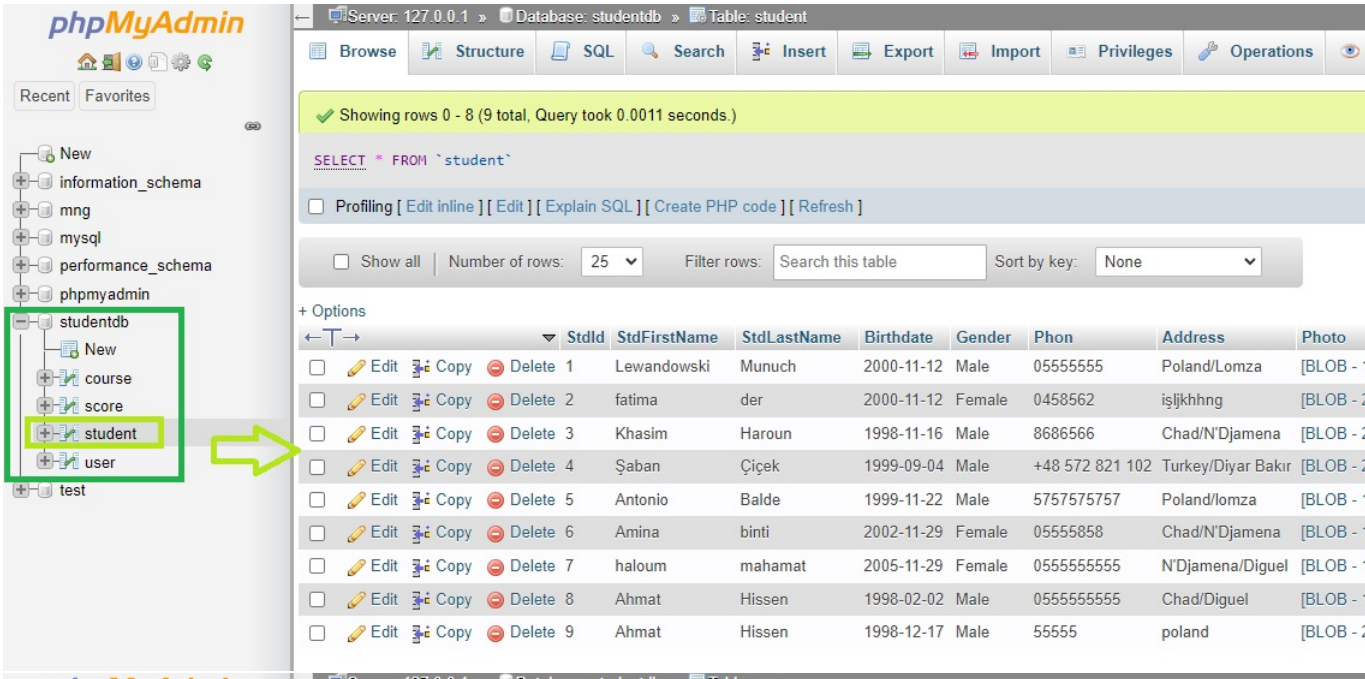


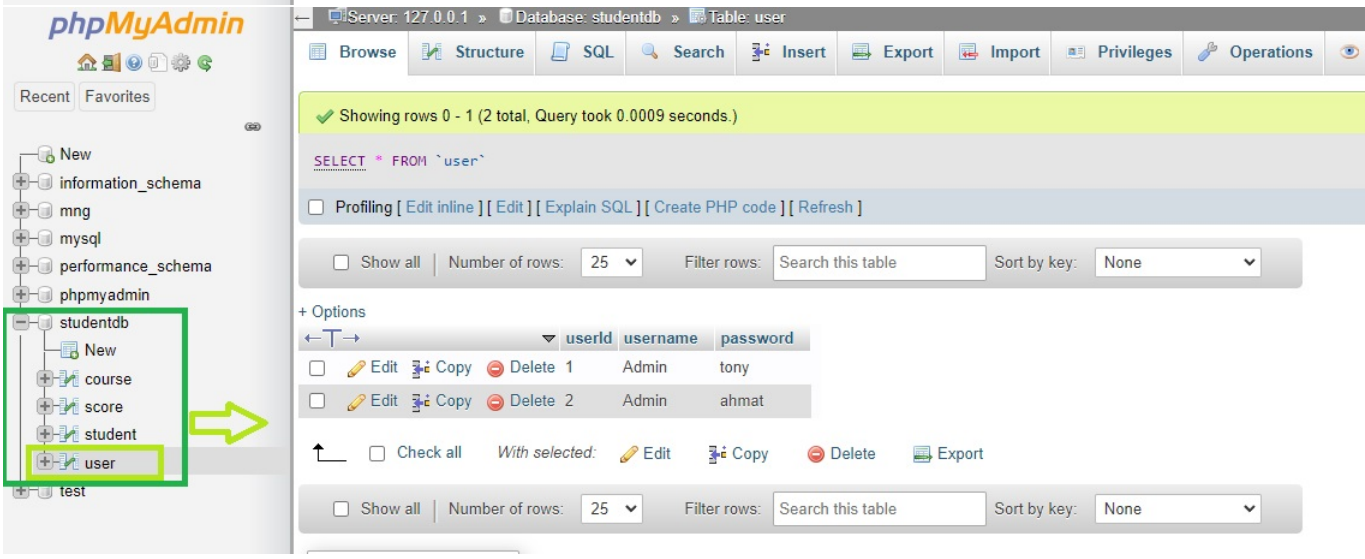
After creating the new database, we created four tables:

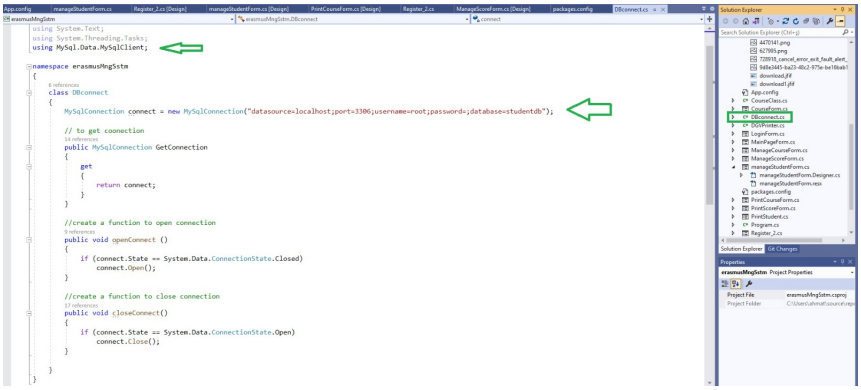
- Course
- Score
- Student
- User



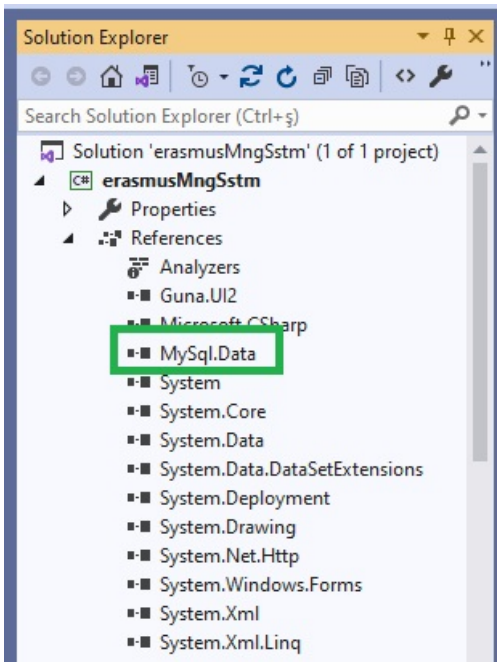

phpMyAdmin
Recent Favorites
New
information_schema
mng
mysql
performance_schema
phpmyadmin
studentdb
New
course
score
student
user
test
Server: 127.0.0.1 » Database: studentdb » Table: score
Browse Structure SQL Search Insert Export Import
Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are
Showing rows 0 - 3 (4 total, Query took 0.0012 seconds.)
SELECT * FROM `score`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all | Number of rows: 25 Filter rows: Search this table
+ Options
StudentId CourseName Score Description
7 Python 100 excelent
6 C# 75 good ..
8 CSharp 45 weak
1 CSharp 88 very good
Show all | Number of rows: 25 Filter rows: Search this table


phpMyAdmin
Recent Favorites
New
information_schema
mng
mysql
performance_schema
phpmyadmin
studentdb
New
course
score
student
user
test
Server: 127.0.0.1 » Database: studentdb » Table: student
Browse Structure SQL Search Insert Export Import Privileges Operations
Showing rows 0 - 8 (9 total, Query took 0.0011 seconds.)
SELECT * FROM `student`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
+ Options
StdId StdFirstName StdLastName Birthdate Gender Phon Address Photo
Edit Copy Delete 1 Lewandowski Munuch 2000-11-12 Male 05555555 Poland/Lomza [BLOB -
Edit Copy Delete 2 fatima der 2000-11-12 Female 0458562 işljkhhng [BLOB -
Edit Copy Delete 3 Khasim Haroun 1998-11-16 Male 8686566 Chad/N'Djamena [BLOB -
Edit Copy Delete 4 Şaban Çiçek 1999-09-04 Male +48 572 821 102 Turkey/Diyar Bakır [BLOB -
Edit Copy Delete 5 Antonio Balde 1999-11-22 Male 5757575757 Poland/lomza [BLOB -
Edit Copy Delete 6 Amina binti 2002-11-29 Female 05555858 Chad/N'Djamena [BLOB -
Edit Copy Delete 7 haloum mahamat 2005-11-29 Female 0555555555 N'Djamena/Diguel [BLOB -
Edit Copy Delete 8 Ahmat Hissen 1998-02-02 Male 0555555555 Chad/Diguel [BLOB -
Edit Copy Delete 9 Ahmat Hissen 1998-12-17 Male 55555 poland [BLOB -


phpMyAdmin
Recent Favorites
New
information_schema
mng
mysql
performance_schema
phpmyadmin
studentdb
New
course
score
student
user
test
Server: 127.0.0.1 » Database: studentdb » Table: user
Browse Structure SQL Search Insert Export Import Privileges Operations
Showing rows 0 - 1 (2 total, Query took 0.0009 seconds.)
SELECT * FROM `user`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
+ Options
userId username password
Edit Copy Delete 1 Admin tony
Edit Copy Delete 2 Admin ahmat
Check all With selected: Edit Copy Delete Export
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None



After adding a new class into the project and a namespace for it, we created the connection (My SQL) from the database to the application.
On the Solution Explorer from Visual Studio we added a new reference into the project.



4.0.2 Interface

The following pictures are referent to the application interface. Since they were made using Windows Forms, it is just a matter of clicking on certain fields to change the screen and also to preform operations to the database.

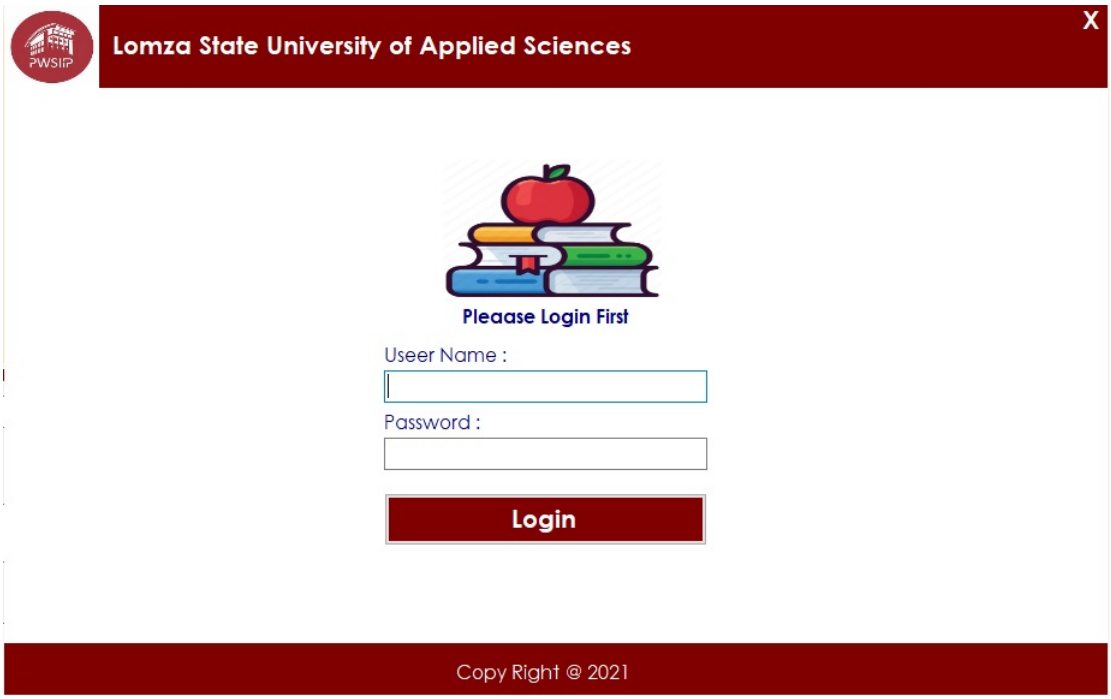


Figura 1 – Log In

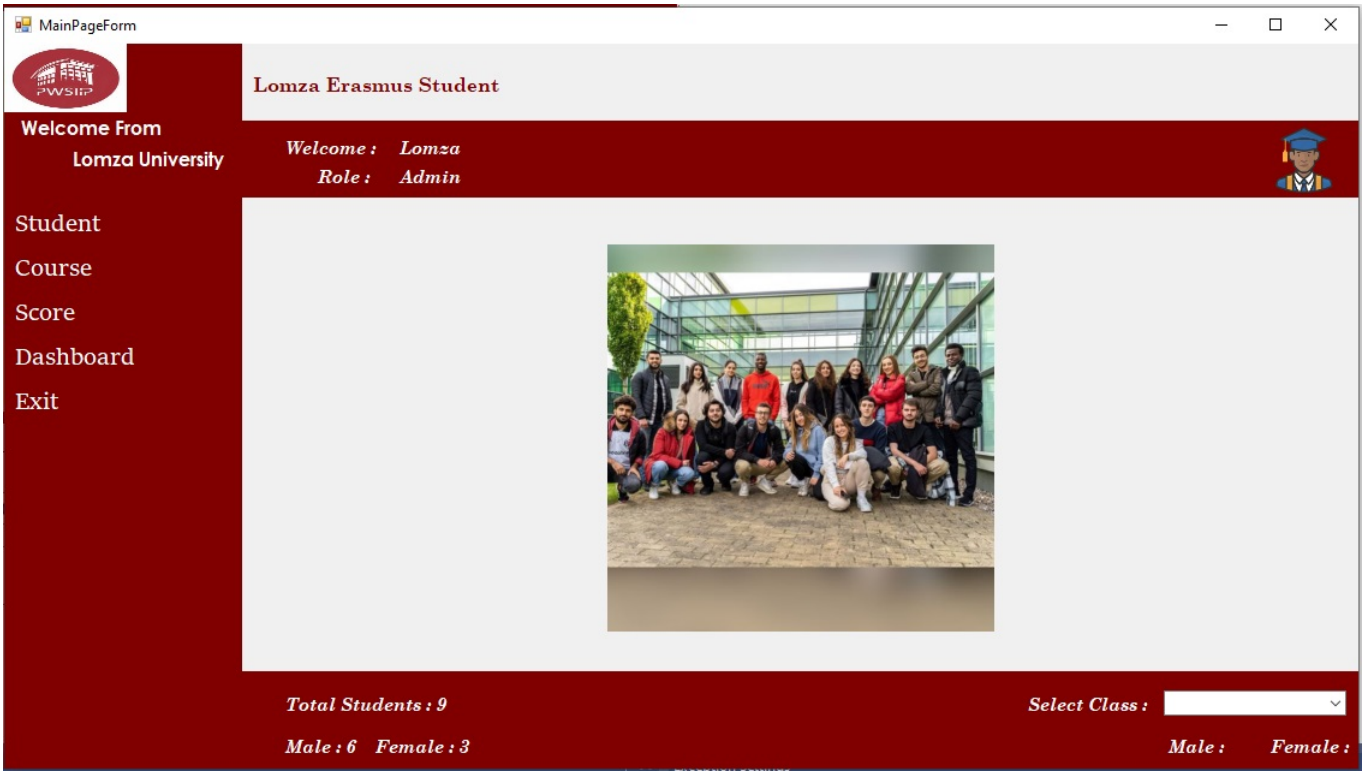


Figura 2 – Dashboard

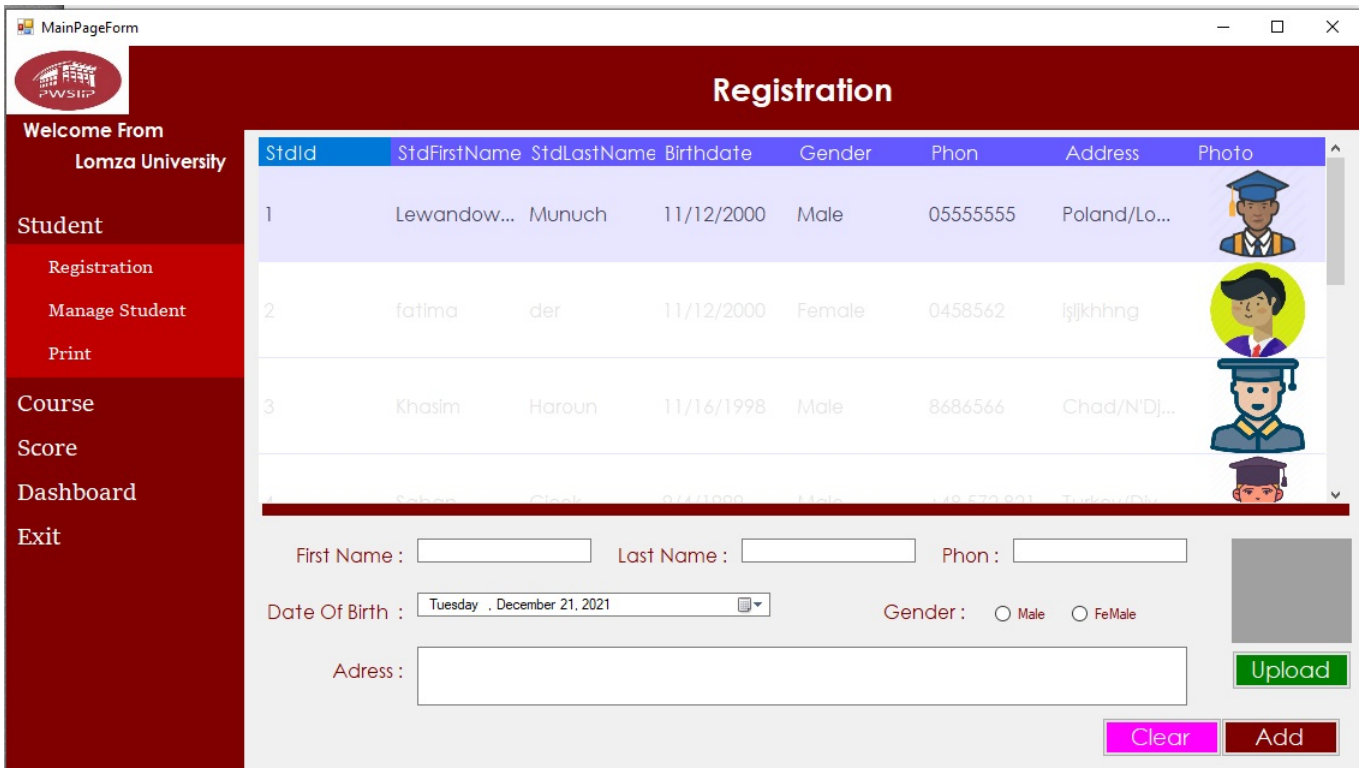


Figura 3 – Student Management

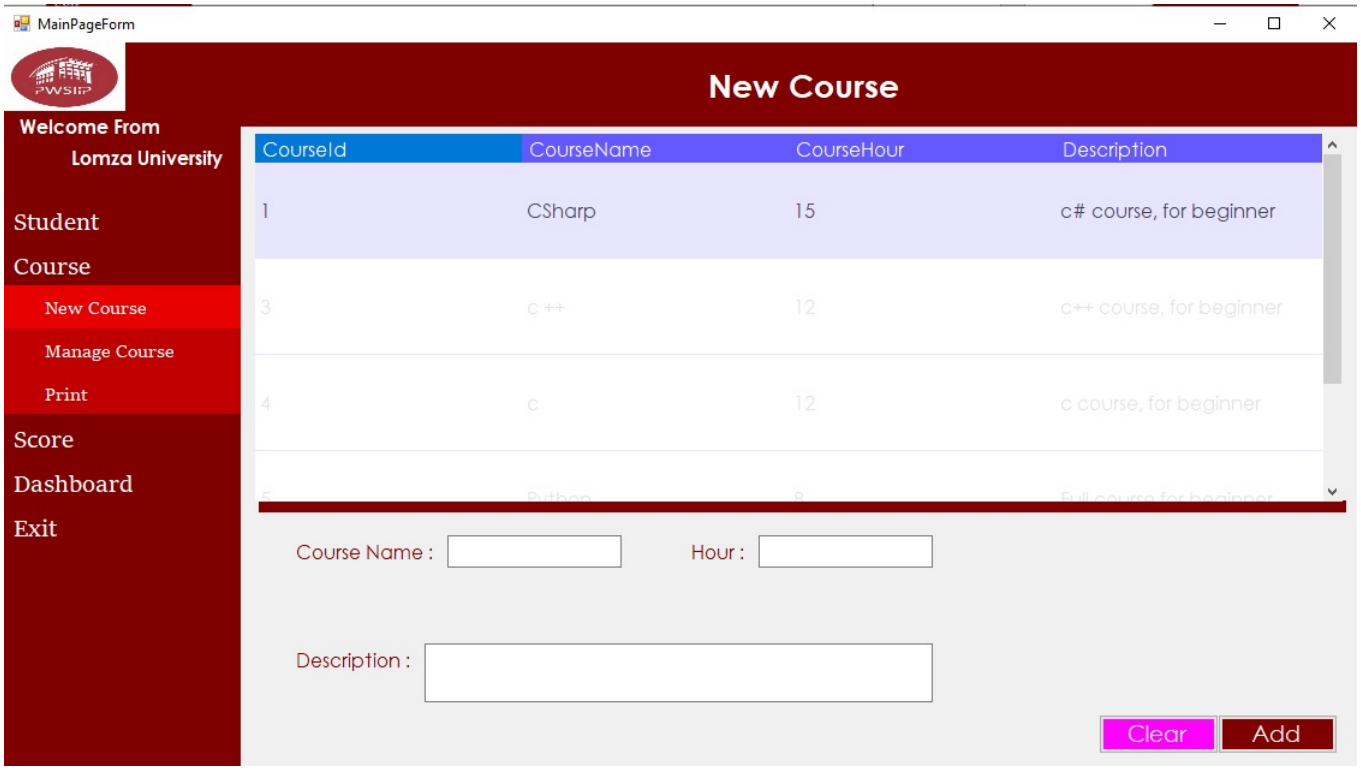


Figura 4 – Course Management

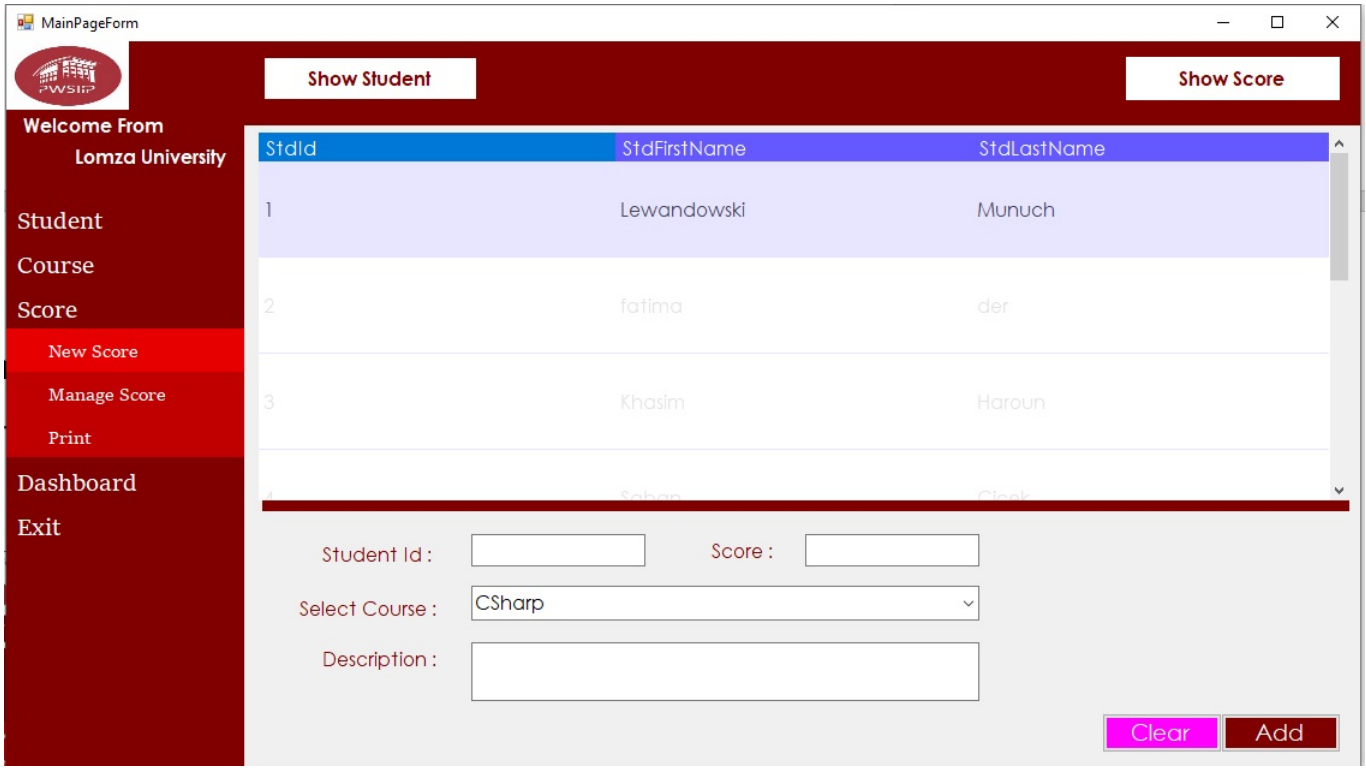


Figura 5 – Score Management

5 Risk Analysis & Use

Analyzing the results, we can confirm that we were able to solve the main problem, however we know that there are some cons where we can highlight the main weakness as the deployment method.

- The application has been designed for desktop so it can only be used on the computer where it is installed. It would be more useful if it were a web app because it allowed its use on different platforms.

In view of current times, IRD staff may have to work remotely, this way it would be more viable if they could access the platform from their personal computer without having to travel to the University. This point makes the platform limited in that aspect.

6 Conclusion

The present work aimed to develop a management platform for the IRD. Our final proposal includes the development of a platform based on the same idea, but with the possibility of being deployed as a web app and also adding some functionalities.
If we had more time, we intended with this work to develop a real application and stop being just an idea, where it would be possible to get feedback from IRD staff who will use it and allow us to improve our idea and make it more complete .
For future work, we intend to use the idea to create a platform where it would be possible to use all agents involved, in this case students and teachers would also have access to the platform, with their own credentials and permissions.

It would be a kind of “Moodle” but aimed at Erasmus students.

We know that “Moodle” is open source and we could run it locally on our computer but that way we wouldn’t "code", just edit some CSS for modifications on the appearance and in the end we wouldn’t create anything, just modify something that already exists, so we discarded that option.

We believe that our proposal was well thought out and well prepared, so it would be something that we really thought of continuing in the future in a more professional environment.

References

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4 MICROSOFT. *Tutorial: Implement CRUD Functionality with the Entity Framework in ASP.NET MVC*. 2020. Disponível em: <https://docs.microsoft.com/en-us/aspnet/mvc/overview/getting-started/getting-started-with-ef-using-mvc/implementing-basic-crud-functionality-with-the-entity-framework-in-asp-net-mvc-application>. 8

5 LEARN, S. *Simple CRUD Operation Asp.Net c With SQL Server | swift learn*. 2021. Disponível em: <https://www.youtube.com/watch?v=ORf1PiEdMik>. 8

Acronyms

CRUD Create-Read-Update-Delete. 6, 8, 11

IRD International Relations Department. 6–8, 11, 18, 19

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