Smart Department



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING BANGLADESH UNIVERSITY OF BUSINESS & TECHNOLOGY (BUBT)

MIRPUR-2. DHAKA

December, 2021

Smart Department

A project

Submitted to the Department of Computer Science and Engineering
Bangladesh University of Business and Technology (BUBT), Dhaka
In partial fulfillment of requirements
For the Software Development 2
of

BACHELOR OF SCIENCE
IN
COMPUTER SCIENCE AND ENGINEERING

BY-

Md. Firose Mahmud (ID: 19201103003)

Md. Habibur Rahman Shohel (ID: 19201103027)

Md. Arafat Hossen (ID: 19201103039)

Intake – 43rd (sec 1)

SUPERVISED BY-Shovon Roy

Lecturer,

Department of Computer Science and Engineering (CSE)

Bangladesh University of Business and Technology (BUBT)

Mirpur-2, Dhaka-1216, Bangladesh

ABSTRACT

We would agree that digital education enhances the learning experience of students by better engaging their attention and enabling them to grasp concepts more readily. It has changed the way education is imparted – a single query or doubt can be clarified in seconds online, there are innumerable resources available for a student online that add on to the classroom.

Most of the student of a university have a computer. A student often does not find a lot of information easily or he/she fall in trouble to find the information from others. So, we decide to make an application which is "Smart Department" Where this application helps the student of any department of BUBT by providing all necessary information.

DECLARATION

We hereby declare that the project entitled "SMART DEPARTMENT"

submitted in partial fulfillment by us for the degree B.Sc. Engineering in

Computer Science and Engineering in the faculty of Computer Science and

Engineering of Bangladesh University of Business and Technology (BUBT)

under the guidance of our supervision of Shovon Roy, Lecturer,

department of Computer Science and Engineering is our own work and it

contains no material which has been accepted for the award to the

candidates of any other disciplines expect few references which is taken

from various books and authors to enrich our knowledge about the topic

of our project.

Md. Firose Mahmud

ID: 19201103003

Intake: 43

Md.Habibur Rahman Shohel

ID: 19201103027

Intake: 43

Md. Arafat Hossan

ID: 19201103039

Intake: 43

ii

CERTIFICATE

TO WHOM IT MAY CONCERN

That is to certify that Md. Firose Mahmud, Md. Habibur Rahman Shohel

and Md. Arafat Hossan students of B.Sc. in CSE has completed their

project work titled "SMART DEPARTMNET" satisfactorily in partial

fulfillment for the requirements of B.Sc. in Computer Science and

Engineering from Bangladesh University of Business and Technology in

the year December, 2021.

ID: 19201103003

Intake: 43

Md. Firose Mahmud Md. Habibur Rahman Shohel

ID: 19201103027

Intake: 43

Md. Arafat Hossan

ID: 19201103039

Intake: 43

Project Supervisor

Shovon Roy

Lecturer

Department of CSE,

Bangladesh University of Business and Technology (BUBT).

Mirpur-2, Dhaka-1216.

iii

DEDICATION

Dedicated to our parents for all their love and inspiration.

ACKNOWLEDGEMENT

"Task successful" makes everyone happy. But the happiness will be gold without glitter if we didn't state the persons who have supported us to make it a success. Success will be crowned to people who made it a reality but the people whose constant guidance and encouragement made it possible will be crowned first on the eve of success.

This acknowledgment transcends the reality of formality when we would like to express deep gratitude and respect to all those people behind the screen who guided, inspired and helped me for the completion of our project work. We consider ourselves lucky enough to get such a good project. This project would add as an asset to our academic profile.

We express our gratitude to the help of our supervisor **Shovon Roy**, for his constant supervision, guidance and co-operation throughout the project and for giving constant motivation and valuable help through the project work. We also would like to thanks to our honorable chairman **Dr. Muhammad Firoz Mridha** for his support and giving us support and giving us permission to use the computer lab whenever we needed.

We extend our sincere gratitude to our parents who have encouraged us with their blessings to do this project successfully. Finally we would like to thank to all our friends, all the teaching and non-teaching staff members of the CSE Department, for all the timely help, ideas and encouragement which helped throughout in the completion of project.

APPROVAL

This project "SMART DEPARTMENT" submitted by Md. Firsoe Mahmud, Md. Habibur Rahman Shohel and Md. Arafat Hossan ID No. 19201103003, 19201103027 and 19201103039 students of B.Sc. in Computer Science and Engineering from Bangladesh University of Business and Technology in the year December, 2021 under the supervision of Shovon Roy, Lecturer, Department of Computer Science and Engineering has been accepted as satisfactory for the partial fulfillment for the requirements of B.Sc. in Computer Science and Engineering and approved as to its style and contents.

Project Supervisor

Shovon Roy

Lecturer

Department of CSE, Bangladesh University of Business and Technology (BUBT). Mirpur-2, Dhaka-1216.

Chairman

Dr Muhammad Firoz Mridha

Chairman

Department of Computer Science and Engineering (CSE) Bangladesh University of Business and Technology (BUBT) Mirpur-2, Dhaka-1216, Bangladesh

COPYRIGHT

© Copyright by Md. Firose Mahmud (19201103003), Md. Habibur Rahman Shohel (19201103027) and Md. Arafat Hossan (19201103039)

All Right Reserved

LIST OF FIGURES

Figure-1 : Loading Page	5
Figure-2 : Home Page	6
Figure-3 : Admin-Student Home Page	6
Figure-4 : Admin Login Page	7
Figure-5 : Admin Show Data Page	7
Figure-6: Admin Show Data Page (Basic)	8
Figure-7: Admin Show Data Page (Class Link)	8
Figure-8 : Admin Show Data Page (Reference Book)	9
Figure-9 : Admin Show Data Page (Slide & Record)	9
Figure-10 : Admin Show Data Page (Routine)	10
Figure-11 : Admin Show Data Page (Notice)	10
Figure-12 : Admin Insert Page	11
Figure-13 : Admin Insert Data Page (Basic)	11
Figure-14 : Admin Insert Data Page (Class Link)	12
Figure-15 : Admin Insert Data Page (Reference Book)	12
Figure-16 : Admin Insert Data Page (Slide & Record)	13
Figure-17 : Admin Insert Data Page (Routine)	13
Figure-18 : Admin Insert Data Page (Notice)	14
Figure-19 : Admin Update & Delete Page	14
Figure-20 : Admin Update & Delete Data Page (Basic)	15
Figure-21 : Admin Update & Delete Data Page (Class Link)	15
Figure-22 : Admin Update & Delete Data Page (Reference Book)	16
Figure-23 : Admin Update & Delete Data Page (Slide & Record)	16
Figure-24 : Admin Update & Delete Data Page (Routine)	17
Figure-25 : Admin Update & Delete Data Page (Notice)	17
Figure-26 : Student Registration Page	18
Figure-27 : Student Login Page	19
Figure-28 : Student Show Data Page	19
Figure-29 : Student Show Data Page (Basic)	20
Figure-30 : Student Show Data Page (Class Link)	20
Figure-31 : Student Show Data Page (Reference Book)	21

Figure-33:	Student Show Data Page (Routine)	22
Figure-34:	Student Show Data Page (Notice)	22
Figure-35:	Schema Diagram	23
Figure-36:	ER Diagram	23
	Table of Contents	
		Page No
Abstract		i
Declaration	n	ii
Certificate.		iii
Dedication		iv
Acknowled	lgement	v
Approval		vi
List of Figu	re	viii
1. Introduc	tion	1
2 Project F	Review	1
	Problem Statement	
2.2	Objective of this project	
2.3	Feature of this project	
	,	
3. Technolo	ogies	2
3.1	Software	2
	3.1.1 Visual studio	2
	3.1.2 Xampp	3
	3.1.3 mysql-connector-net-8.0.23	3

Figure-32 : Student Show Data Page (Slide & Record)21

3.2	Programming Language	3
	3.2.1 C# Language	3
3.3	Software framework	4
	3.3.1 The .NET framework	4
4. System	Analysis	5
4.1 9	System user analysis	5
	4.1.1 Admin Panel	
	4.1.2 Student Panel	5
5. Access S	iystem	5
5.1	Admin Panel	5
5.2	Student Panel	18
6. Diagram	1	23
	schema diagram	
	ER Diagram	
	vork	
	ion	
9. Referen	ce	24

1. Introduction

We would agree that digital education enhances the learning experience of students by better engaging their attention and enabling them to grasp concepts more readily. It has changed the way education is imparted – a single query or doubt can be clarified in seconds online, there are innumerable resources available for a student online that add on to the classroom.

Most of the student of a university have a computer. A student often does not find a lot of information easily or he/she fall in trouble to find the information from others. So, we decide to make an application which is "Smart Department" Where this application helps the student of any department of BUBT by providing all necessary information.

2. Project Review

2.1 Problem Statement:

We developed a software for the students of BUBT where the students of all department will be the user. And they can get access to by registering in this software. They will get course related information, class link, reference book, slide & record, class routine and notice.

2.2 Objective of this Project:

We were looking for a project to select that didn't match the other groups.

The "SMART DEPARTMENT" got the idea while searching for the project in internet. There we saw a lot of complete projects but they were in another high level language. There were no such projects using C# language. And then we decided that we would complete this project using C# language.

By the end of this project, the basics in C# language have become clearer. The mentality of developing software and working in a team has been created. By completing the project we learned some of the functions of C# language that were unknown to us.

2.3 Feature of this project:

- 1. Course related information
- 2. Class link
- 3. Reference book
- 4. Slide & record
- 5. Class routine
- 6. Notice.

3. Technologies

3.1 Software:

3.1.1 Visual studio:

Visual Studio is an Integrated Development Environment (IDE) developed by Microsoft to develop GUI(Graphical User Interface), console, Web applications, web apps, mobile apps, cloud, and web services, etc. With the help of this IDE, you can create managed code as well as native code. It uses the various platforms of Microsoft software development software like Windows store, Microsoft Silverlight, and Windows API, etc. It is not a language-specific IDE as you can use this to write code in C#, C++, VB(Visual Basic), Python, JavaScript, and many more languages. It provides support for 36 different programming languages. It is available for Windows as well as for macOS.

3.1.2 Xampp:

XAMPP is a cross-platform web server that is free and open-source. XAMPP is a short form for Cross-Platform, Apache, MySQL, PHP, and Perl. XAMPP is a popular cross-platform web server that allows programmers to write and test their code on a local webserver. It was created by Apache Friends, and the public can revise or modify its native source code. It includes MariaDB, Apache HTTP Server, and interpreters for PHP and Perl, among other computer languages. Because of XAMPP's simplicity of deployment, a developer can quickly and easily install a WAMP or LAMP stack on an operating system, with the added benefit that common addin apps like WordPress and Joomla can also be loaded.

3.1.3 mysql-connector-net-8.0.23:

MySQL Connector/NET 8.0.23 is the latest General Availability release of the MySQL Connector/NET 8.0 series. This version supports .NET 5.0 and the X DevAPI, which enables application developers to write code that combines the strengths of the relational and document models using a modern, NoSQL-like syntax that does not assume previous experience writing traditional SQL.

3.2 Programming Language:

3.2.1 C# Language:

C# (pronounced "See Sharp") is a modern, object-oriented, and type-safe programming language. C# enables developers to build many types of secure and robust applications that run in .NET. C# has its roots in the C family of languages and will be immediately familiar to C, C++, Java, and JavaScript programmers. This tour provides an overview of the major components of the language in C# 8 and earlier. If you want to explore the language through interactive examples, try the introduction to C# tutorials.

C# is an object-oriented, *component-oriented* programming language. C# provides language constructs to directly support these concepts, making C# a natural language in which to create and use software components.

Since its origin, C# has added features to support new workloads and emerging software design practices. At its core, C# is an **object-oriented** language. You define types and their behavior.

3.3 Software framework

3.3.1 The .NET framework:

.NET is a framework to develop software applications. It is designed and developed by Microsoft and the first beta version released in 2000. It is used to develop applications for web, Windows, phone. Moreover, it provides a broad range of functionalities and support.

This framework contains a large number of class libraries known as Framework Class Library (FCL). The software programs written in .NET are executed in the execution environment, which is called CLR (Common Language Runtime). These are the core and essential parts of the .NET framework. This framework provides various services like memory management, networking, security, memory management, and type-safety.

The .NET Framework is composed of four main components:

- 1. Common Language Runtime (CLR)
- 2. Framework Class Library (FCL),
- 3. Core Languages (WinForms, ASP.NET, and ADO.NET), and
- 4. Other Modules (WCF, WPF, WF, Card Space, LINQ, Entity Framework, Parallel LINQ, Task Parallel Library, etc.)

4. System Analysis

4.1 System user analysis

4.1.1 Admin Panel:

In this panel admin can login to the software using a special Username & an admin key. From the admin panel an admin can view all data, insert any data, change/update any data and also can delete any data from the database.

4.1.2 Student Panel:

In the student panel the user have to registration with some personal information and then he/she can login to the software using the username and password. Then he/she can only view his/her needed data.

5. Access System

5.1.1 Admin Panel:

In this panel admin can login to the software using a special Username & an admin key. From the admin panel an admin can view all data, insert any data, change/update any data and also can delete any data from the database.



Figure-1: Loading Page

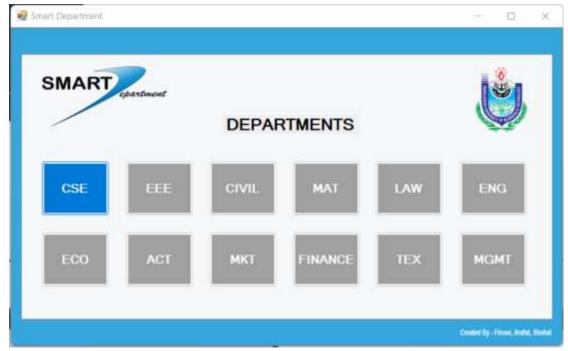


Figure-2: Home Page



Figure-3 : Admin-Student Home Page

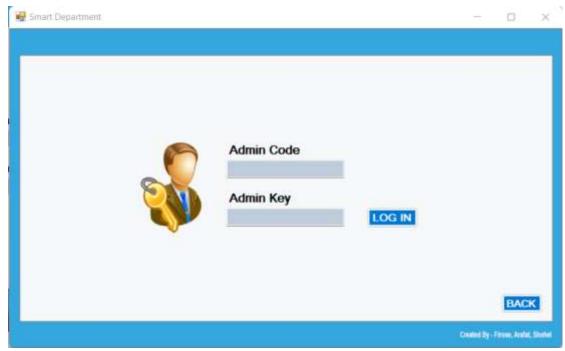


Figure-4 : Admin Login Page

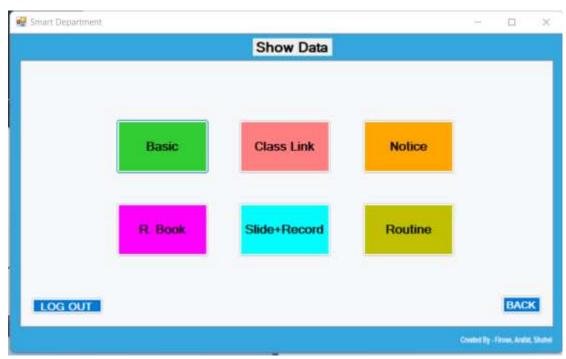


Figure-5: Admin Show Data Page

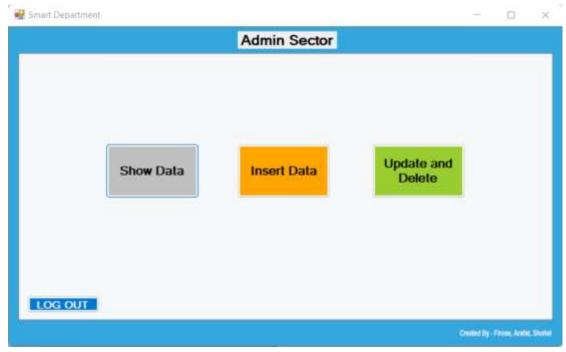


Figure-6: Admin Show Data Page (Basic)

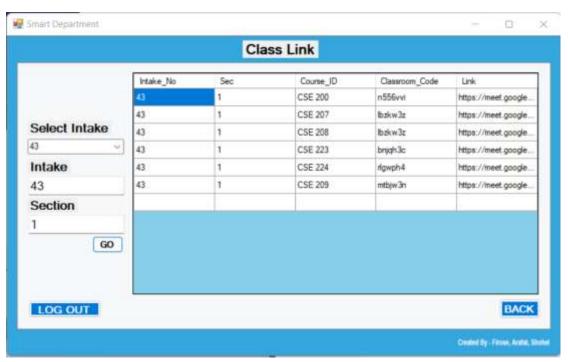


Figure-7: Admin Show Data Page (Class Link)

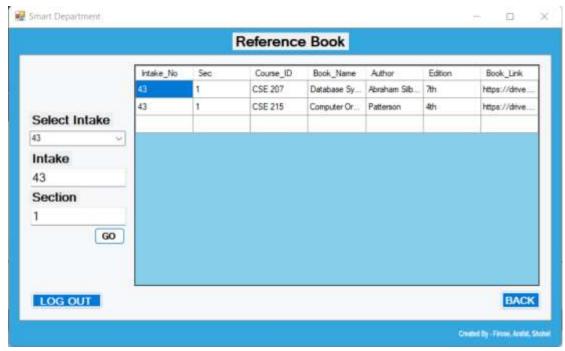


Figure-8: Admin Show Data Page (Reference Book)



Figure-9: Admin Show Data Page (Slide & Record)

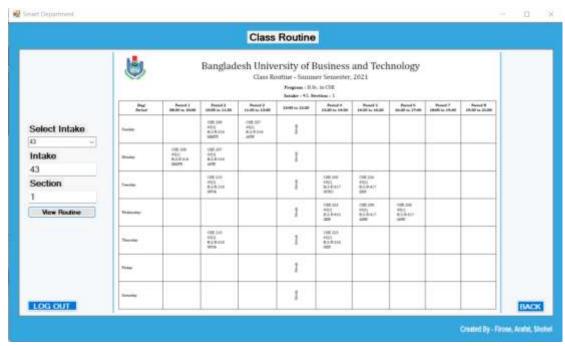


Figure-10: Admin Show Data Page (Routine)

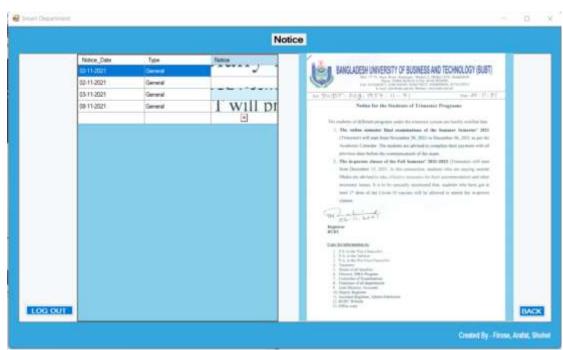


Figure-11: Admin Show Data Page (Notice)

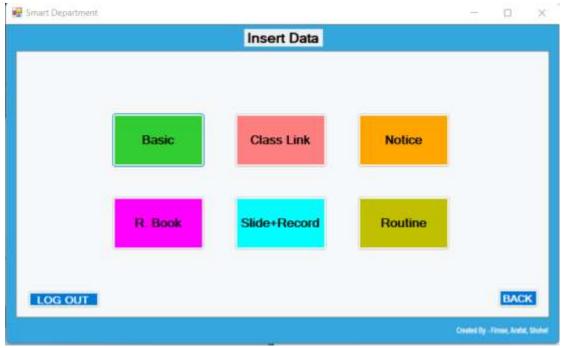


Figure-12 : Admin Insert Page

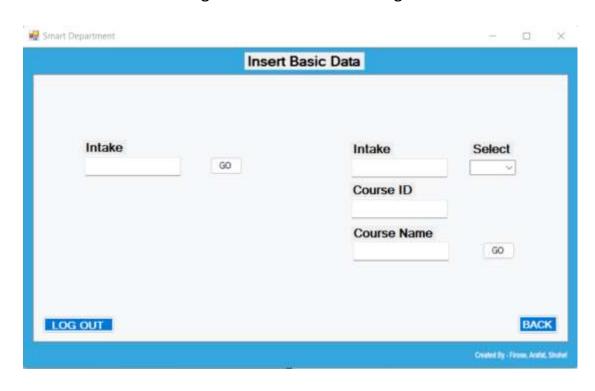


Figure-13: Admin Insert Data Page (Basic)

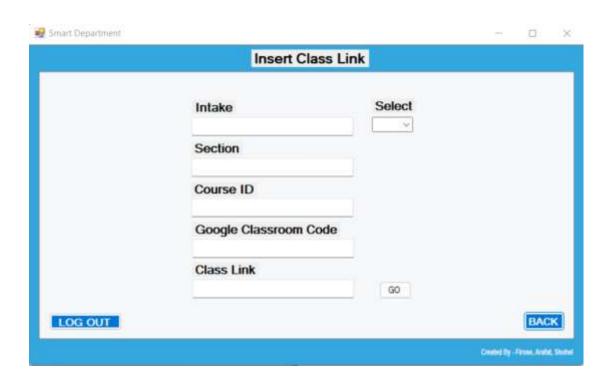


Figure-14: Admin Insert Data Page (Class Link)

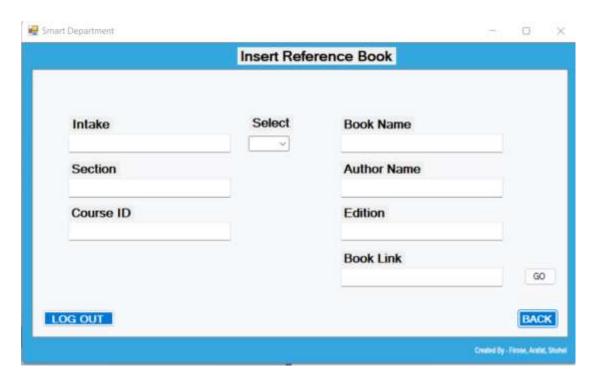


Figure-15: Admin Insert Data Page (Reference Book)

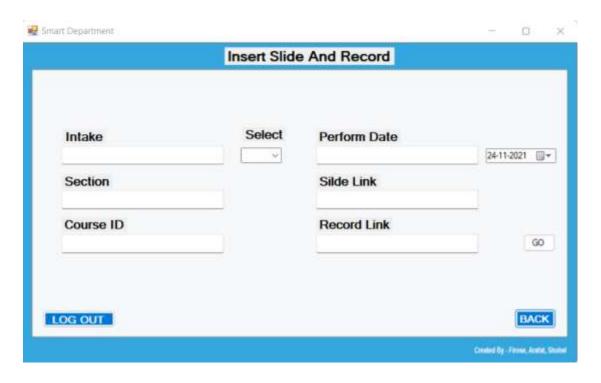


Figure-16: Admin Insert Data Page (Slide & Record)



Figure-17: Admin Insert Data Page (Notice)



Figure-18: Admin Insert Data Page (Routine)

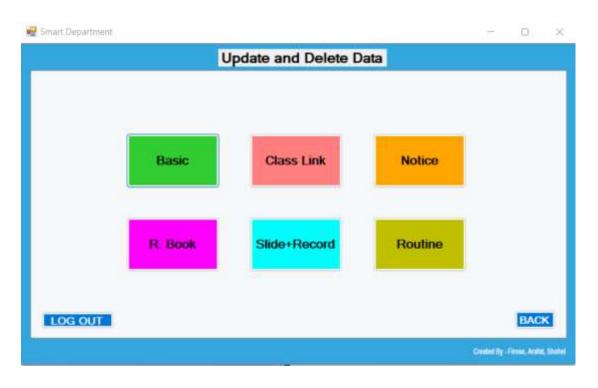


Figure-19: Admin Update & Delete Page

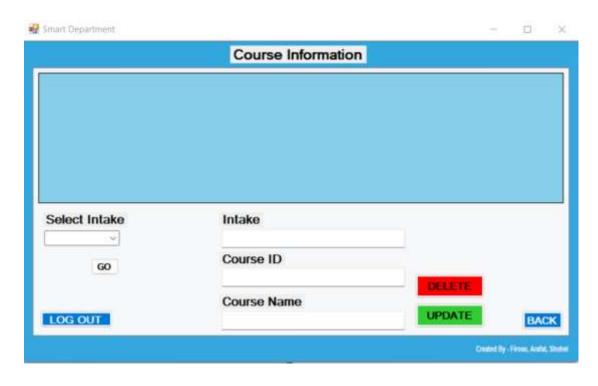


Figure-20: Admin Update & Delete Data Page (Basic)



Figure-21: Admin Update & Delete Data Page (Class Link)

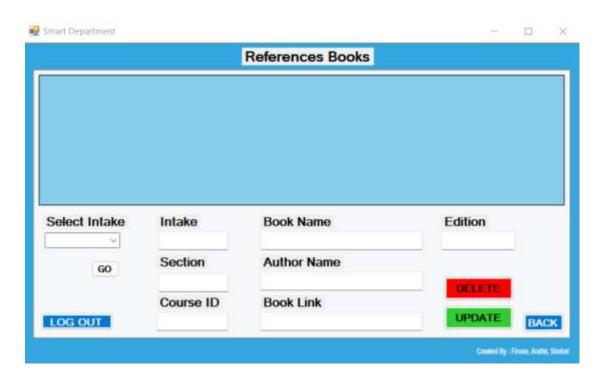


Figure-22: Admin Update & Delete Data Page (Reference Book)

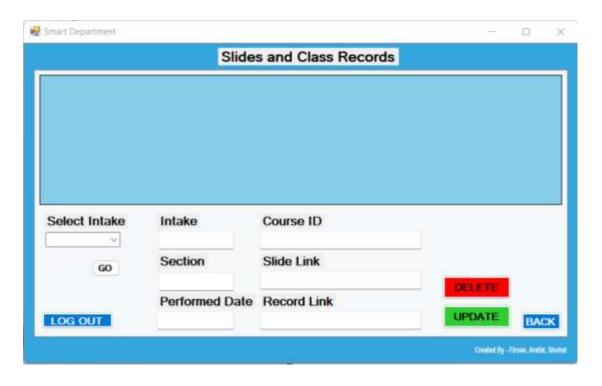


Figure-23: Admin Update & Delete Data Page (Slide & Record)

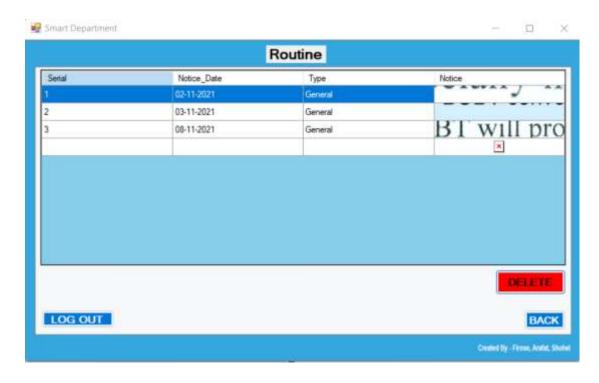


Figure-24: Admin Update & Delete Data Page (Routine)



Figure-25 : Admin Update & Delete Data Page (Notice)

5.1.2 Student Panel:

In the student panel the user have to registration with some personal information and then he/she can login to the software using the username and password. Then he/she can only view his/her needed data

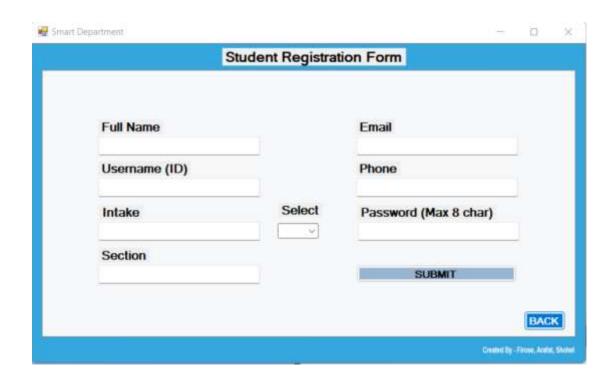


Figure-26: Student Registration Page

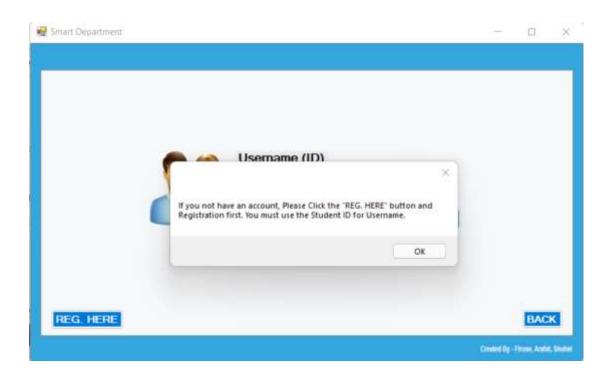


Figure-27 : Student Login Page

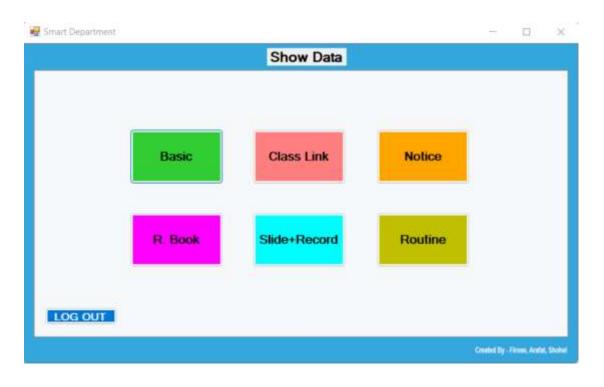


Figure-28 : Student Show Data Page

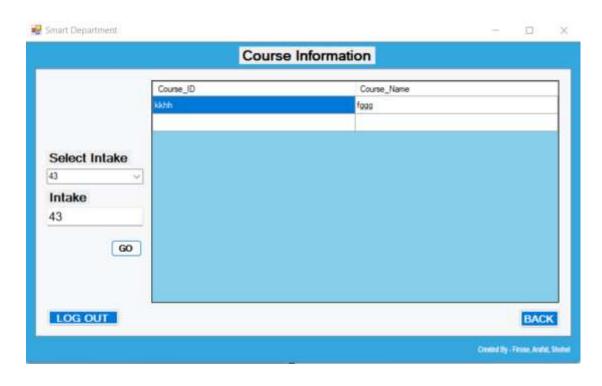


Figure-29: Student Show Data Page (Basic)

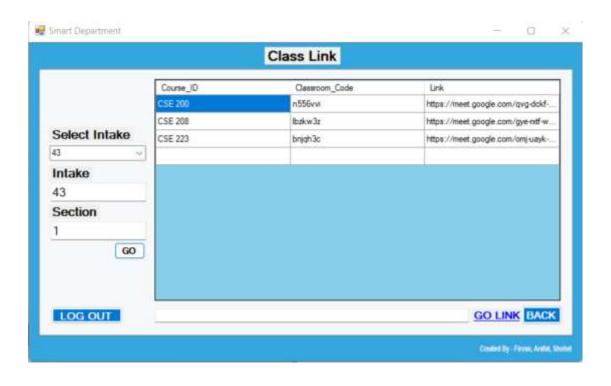


Figure-30: Student Show Data Page (Class Link)

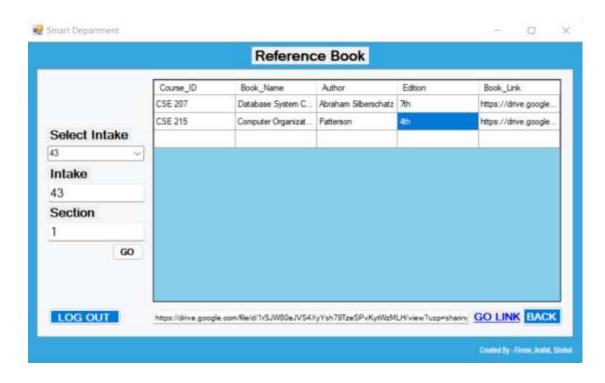


Figure-31: Student Show Data Page (Reference Book)



Figure-32 : Student Show Data Page (Slide & Record)

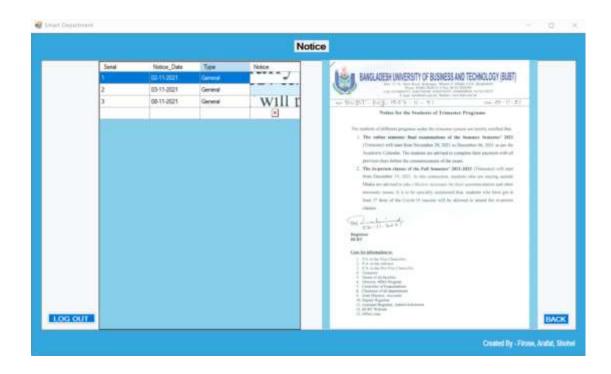


Figure-34: Student Show Data Page (Notice)

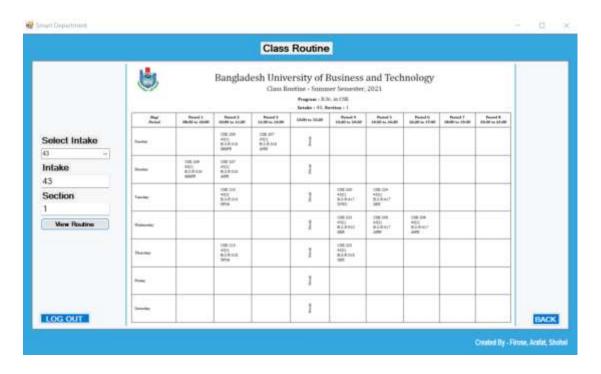
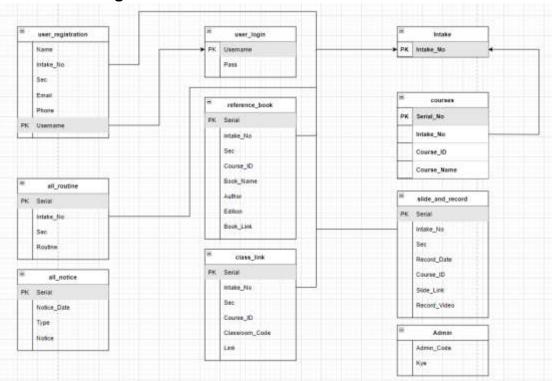


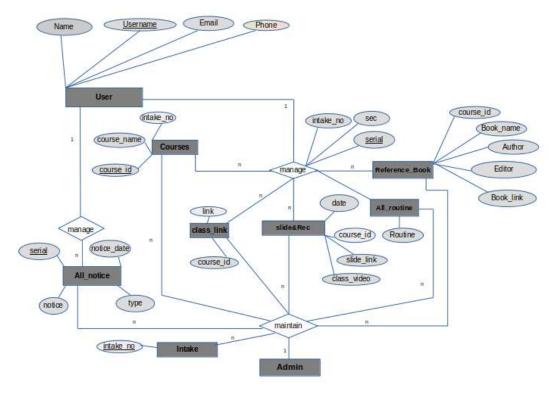
Figure-33: Student Show Data Page (Routine)

6. Diagram

6.1 Schema diagram:



6.2 ER Diagram:



7. Future work

- 1. We want to make this software more user friendly.
- 2. We will an option for reporting bugs for fixing bugs (if any) or suggestions for better support.
- 3. We will add an option as "Previous Question" for students if BUBT Authority allow us.

8. Conclusion

We started this project when we had very few concepts about the C# language and its different usage. During the project preparation we were introduced with the new concepts and new elements of C# language along with the progression of the course. We were able to apply all those theoretical C# concepts taught to us in our application to make it more and more functional. Over time, we've worked to make our project more compact and more user-friendly. During this period we learned various C# programming concepts and now in position to design in the error free program successfully.

Overall the team feels that the project is pretty successful although we did face a few problems here and there but we came to know the various C# programming techniques. We learned to make the variables and constants either global or local. Then we also learned the practical way of implementing the structures in the program and access the members of structures, compare them, initialize them and so on. The implementation of techniques like string comparison, function calling, recursion, array storage, using file for storage, and calling by value or reference has broaden my knowledge regarding C# language.

9. Reference

BUBT Official Website: https://www.bubt.edu.bd

BUBT ANNEX: https://annex.bubt.edu.bd/

BUBT Notice Board: https://www.bubt.edu.bd/Home/all notice