

Project Report

DEVELOPMENT OF ONLINE STUDENT COURSE REGISTRATION SYSTEM

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DECLARATION

We hereby declare that This project report submitted to the Department of Information and Communication Engineering, Noakhali Science and Technology University, in partial fulfillment of the requirements for the degree of B.Sc. (Eng.) in Information and Communication Engineering, we also declare that this project report has not been submitted elsewhere for the requirement of any kind of Degree, Diploma or Publication.

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ACCEPTANCE

This project report is submitted to the Department of Information & Communication Engineering, Noakhali Science & Technology University, Sonapur, Noakhali in partial fulfillment of the requirements for having the B.Sc. degree in ICE.

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ABSTRACT

This paper presents the research and findings of a student course registration system at a university. It has been seen that in manual course registration system students must be physically present on their campus to do registration for the semester and they have to wait for verification from their concern officials and also have to wait at the bank for making payment and so on. So, the manual system of course registration is very time consuming. We proposed a computerized system that overcomes all limitations of manual system. In this project, our proposed system as named “Development of Online Student Course Registration System” will implemented for students. Basically, we focus on to simplify the course registration procedure for students at a university.

TABLE OF CONTENT

Declaration	i
Acceptance	ii
Abstract	iii
Table of content	iv
List of figures	vii
List of Images	viii
CHAPTER 1 INTRODUCTION	1
1.1 Background Study	1
1.2 Problem Statement	2
1.3 Objective	2
1.4 The Scope Of The Project Work	3
CHAPTER 2 LITERATURE REVIEW	5
2.1 Literature Review	5
2.2 Online Registration	5
2.3 Existing Online Registration Systems	5
2.4 Comparison Between The Existing System And Our System	9
2.5 Summery	12
CHAPTER 3 METHODOLOGY	13
3.1 Methodology	13
3.2 Analysis Of The Current System	13
3.2.1 Flowchart Of The Current System	14

3.3 Proposed System	15
3.3.1 Requirements Specification	15
3.3.2 Functional Requirements	15
System Administrator	15
Student	16
Chairperson/Director	16
Hall Provost	17
3.3.3 Use Case Diagram Of The Proposed System	18
3.3.4 E-R Diagram Of The Proposed System	19
3.3.5 Dfd Diagram Of The Proposed System	20
3.3.6 Level-0 Dfd For Administrator	21
3.3.7 Level-0 Dfd For Student	21
3.3.8 Payment Method	22
Trust Axiata Pay (Tap)	22
Nagad	22
3.4 Project Development Tools	23
3.4.1 Software Language Tools	23
Mysql Server & Xampp:	23
Php:	23
Laravel:	24
Html5 & Css3:	24
Bootstrap:	24
Javascript & JQuery:	24
3.4.2 Hardware Interface	25
3.4.3 Software Interface	25
CHAPTER 4 RESULT	27
4.1 Student Module	27
4.1.1 Home Page	27
4.1.2 Signup Page	28
4.1.3 Login Page	29
4.1.4 Student Dashboard Page	30
4.1.5 Course Registration Notice	31
4.1.6 Course Registration Type Page	31
4.1.7 Course Registration Form	32
4.1.8 Course Registration Update Information	33
4.1.9 Payment System	33
4.1.9 Payment Slip Download	34
4.2 Admin Module	35
4.2.1 Admin Signup	35
4.2.2 Admin Login	36
4.2.3 Super Admin Dashboard	36
4.2.4 Course Co-Ordinator Dashboard	38
4.2.5 Chairman/Director Dashboard	39

4.2.6 Provost Dashboard	40
4.2.7 Register Dashboard	41
4.2.8 Director Of Accounts Dashboard	43
CHAPTER 5 CONCLUSION & FUTUTRE WORK	44
5.1 Conclusion	44
5.2 Future Work	44
REFERENCES	45

LIST OF FIGURES

Figure No	Title	Page
Figure 3. 1:	Flowchart of the current manual system	14
Figure 3.2:	Use case diagram for admin and student	18
Figure 3.3:	E-R Diagram of online course registration system	19
Figure 3.4:	Data Flow Diagram of online course registration system	20
Figure 3.5:	DFD For Administrator	21
Figure 3.6:	DFD For Student	21
Figure 4.1:	Home Page	28
Figure 4.2:	Signup Page	29
Figure 4.3:	Reset Password	30
Figure 4.4:	Login Page	30
Figure 4.5:	Student Dashboard	30
Figure 4.6:	Course Registration Notice	31
Figure 4.7:	Course Registration Type	31
Figure 4.8:	Course Registration Form	32
Figure 4.9:	Course Registration Update Information	33
Figure 4.10:	Payment System	33
Figure 4.11:	Rule for Payment Through Nagad and Tap	33
Figure 4.12:	Payment Slip	34
Figure 4.13:	Admin Signup Page	35
Figure 4.14:	Admin Login	36
Figure 4.15:	Super Admin Dashboard	36
Figure 4.16:	Admins Signup Request	37
Figure 4.17:	Add new faculty	37
Figure 4.18:	Add new department	37
Figure 4.19:	Course Coordinator Dashboard	38
Figure 4.20:	Student's Course Registration Request List	38

Figure 4.21: Add Subject/Course	39
Figure 4.22: Chairman/Director Dashboard	39
Figure 4.23: Student Course Registration List	40
Figure 4.24: Provost Dashboard	40
Figure 4.25: Student Course Registration List	41
Figure 4.26: Register Dashboard	41
Figure 4.27: All Course Registration List	42
Figure 4.28: Add Credit Fee	42
Figure 4.29: Upload Course Registration Notice	42
Figure 4.30: Director of Accounts Dashboard	43

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND STUDY

A system is a layered structure that represents how programs involved would interrelate and communicate. System can also refer to actual programs, programming interfaces, and tools for managing the larger system in computers. Online student course registration system combines multiple systems to construct a combined framework. This framework consists of multiple modules [1].

Basically, systems are designed to simplify complex manual processes, and that's exactly what we are trying to achieve. System is implemented according to the needs of the users. Now Course registration is done by students at university registration center. Students must move physically to the university campus to complete their course registration process.

For the automation of the manual registration system, we sought assistance from computer programming. Computers can help us save time, protect our personal information, and allow us to access information whenever and wherever we need it. Keeping all these positive points in mind, we are going to create an Online Student Course Registration System to simplify the course registration procedure for students at a university.

1.2 PROBLEM STATEMENT

The following are the problems that the current system has: -

- i. Students must move physically to the university campus to complete their course registration process. So, they are unable to complete their course registration process remotely.
- ii. Students must bring the course registration form from the register office.
- iii. They must fill up the registration form and submit it to their individual course coordinator, chairman, and hall provost for approval.
- iv. They need to make a payment at the bank physically, but there is a long line, so they will have to wait.
- v. After making payment they must go to their department office and submit a copy of payment slip.
- vi. Students take too much time in processing their course registration.

1.3 OBJECTIVE

The current manual system faces a variety of challenges when it comes to manually maintaining student data. Currently, hard copy registers are kept to verify student information. From students' point of view, they must fill the forms manually and then get them verified from concerned officials, which is a very time-consuming process. The goal of the current research is to reduce the workload of all entities engaged in the course registration process. The following are the objectives of the proposed web application system:

- i. To create a computerized database of students and faculty.
- ii. To computerize department based academic syllabus database.
- iii. To make sure that data is consistent and accurate.
- iv. To reduce the paper driven aspects of the existing system.
- v. To reduce administrative cost.
- vi. To save student time.

- vii. To automate the registration process without any physical human interaction.
- viii. Allowing department to acknowledge registration requests from anywhere.
- ix. To make the registration process available to students from anywhere.

The achievement of the above objectives can assist the institution in effectively managing its resources. The automated method will save time and eliminate typical errors.

1.4 THE SCOPE OF THE PROJECT WORK

The proposed system is currently mainly intended to be different types of users. They are

- i. Student
 - ii. Course Coordinator
 - iii. Chairman
 - iv. Director
 - v. Dean
 - vi. Provost
 - vii. Register
 - viii. Deputy Register
 - ix. Controller of examination
 - x. Deputy controller of examination
 - xi. Director of Accounts
 - xii. Deputy director of accounts
1. **Student:** Student will make a signup request, after approving signup request student can be able to login. Then they can be able to make a course registration request and to make the registration complete step by step.
 2. **Super Admin:** This system principal administrator is Super Admin. He is responsible for accepting or rejecting the Course Coordinator/Chairman/Director/Dean/Provost/Register/Deputy Registrar/Exam Controller/Deputy Controller of Examinations/Accounts Director/Accounts Sign Up Request.

3. **Course Coordinator:** Course Coordinator will make a signup request, after approving signup request, they can be able to login. Then they can be able to accept or reject student signup or course registration request by verifying the students. Only the course coordinator of that session will be able to verify the students of that batch/session.
4. **Chairman/Director:** Chairman/Director will make a signup request, after approving signup request, they can be able to login. Then they can be able to accept or reject student signup or course registration request by verifying the students. Chairman/Director will only be able to verify the students of his/her department/Institute.
5. **Dean:** Dean will make a signup request, after approving signup request, they can be able to login. Dean will only be able to verify the students of his/her faculty.
6. **Provost:** Provost will make a signup request, after approving signup request, they can be able to login. Provost will only be able to verify the students of his/her hall.
7. **Register/Deputy Register:** Register/Deputy Register will make a signup request, after approving signup request, they can be able to login. Register / Deputy Register will be able to supervise the course registration of all students. They will create and publish notices of course registration.
8. **Controller of examination/Deputy Controller of examination:** Controller of examination /Deputy Controller of examination will make a signup request, after approving signup request, they can be able to login. They will only be able to see how many students have registered and who has done so.
9. **Director of Accounts/Deputy Director of Accounts:** Director of Accounts/Deputy Director of Accounts will make a signup request, after approving signup request, they can be able to login. They will be able to see how much money is being deposited in which sector and also how many students of which department have registered.

CHAPTER 02

LITERATURE REVIEW

2.1 LITERATURE REVIEW

This chapter reviews the relevant research or project made on the online course registration systems used by different universities or institutions. It covers crucial features of online registration, such as the online registration system, online course registration, and so on.

2.2 ONLINE REGISTRATION

In a university or other institute, an online student registration system simplifies the application, registration, and monitoring of students. According to Morris Wall, “online registration systems are websites that allow users to sign up for memberships, events, and training by completing a form. Online registration systems are replacing manual processes, such as registering by telephone, mail or at events using paper forms”. Many universities have a wide range of courses, students, and faculty. Online course registration system reduces paperwork, personnel, cost, and conserves resources.

2.3 EXISTING ONLINE REGISTRATION SYSTEMS

In December 2008, Gunawardana et al conducted research on online course registration for the faculty of engineering at the University of Peradeniya, and as a result of their findings, they

developed a solution known as Online Registration [2]. The project was separated into three sections: Online Registration, which is their system's initial project, and depending on Data Access and Web security. Web Security would configure the database and handle authentication and authorization, while Data Access would initiate data transactions between the client and the server. At the University of Peradeniya's Faculty of Engineering, the researchers reported their experience designing, creating, and deploying an online course registration system. The system reduced the burden of all parties involved in the course registration process and improved the process by reducing errors. Though their method dramatically reduced errors, it lacked ongoing connection with students in the updates of the student's registration status. It also lacked accountability because several registration stakeholders do not have access to the system.

Registering for courses of the semester in a faculty is an activity students undertake towards the end of every semester. The students at the Bindura University of Science Education (BUSE), like all other universities in Zimbabwe manually fill their course registration forms by collecting them from the Assistant Registrar's (AR) office. These forms are approved by the students' Department head and then the Dean of Faculty before they are returned to the AR's office again for processing. Since there are a lot of chronological steps that need to be followed in the manual registration process chances are high that mistakes can be made for instance students can register a course that is not being currently offered that semester or registration of a course which a student would have failed the prerequisite course. These mistakes compounded by the monotony involved in the manual registration process has got a huge impact to the university in terms of administration and efficient running of the university, because registration is the crucial starting point of all other processes in an academic year. BUSE lecturers complain on time lost during the first weeks of a semester because students spend time in long queues trying to register thereby failing to attend lectures since teaching would have commenced yet students will be still registering [3].

MacEwanRSR is a prototype of web-based course registration system that seeks to improve on the usability issues in myStudentSystem. MacEwanRSR is the culmination of an iterative design, development, and evaluation process [4]. During this process, we conducted a series of studies to identify potential improvements with myStudentSystem, gather feedback on our design features,

and finally evaluate our system in realistic settings. The main features of MacEwanRSR are twofold First, it provides the basic functionality of a course registration system on a single, highly interactive web page. Key features such as searching for courses, enrolling in a class, dropping a class, and displaying a weekly timetable are readily available to users. Course and class elements possess information icons, which provide relevant information about the respective item to the user. Users can display a course description, for example, instantaneously without leaving this web page. Second, MacEwanRSR puts an interactive weekly timetable in the center of its user interface. This timetable takes up most screen space of the system, as it serves as a useful aid to planning, selecting, and registering to courses.

An Online Course Registration System Project Report from Tolstoy Newtonraja and AdityaNafde of the Computer and Information Science & Engineering at the University of Florida saw that there was need for structured storage, modification, and maintenance of huge amounts of data that had resulted in the emergence of the Database Management System (DBMS) as one of the core fields in the Computer Science industry. DBMS is the system of computer software that is aimed to provide a managing tool for maintaining the data, through various data models [5].

An Online Course Registration system for University of Dataville was developed with a frontend web interface and a back-end database. An example of the system had been University of Florida's ISIS Registration [6]. A Database system had to be chosen as the back end such as Oracle, MySQL, Microsoft SQL Server, DB2, and Access. A web server had to be chosen for the front end such as Tomcat, Glassfish, Run, etc. A server-side language had to be chosen such as PHP, JSP, ASP, etc. The practical implementation of a real time database management system made them understand the intricacies involved in designing the database schema with interrelated constraints and the complexity that exists in integrating the front-end system with the back-end data-store. Their project was developed keeping in mind the functionalities for students and instructors and the project also provided all the functionalities specified in the project document and more functionalities can be added over the existing one so that the system has more enhanced features and is more efficient.

Ala'a M. Al-Shaikh of the Institute of Public Administration (IPA) Dammam in Saudi Arabia worked on the development of a web-based application that was conceived, built, and implemented as a web portal that benefited several parties involved in the Associate-Degree General Examination [7]. This system lacked the following features:

- i. **Short message service** - This is a very important service that allows students to receive regular updates on their registration status.
- ii. **Upgrading the system** to enable AJAX (Asynchronous JavaScript and XML) decreases the time it takes for each page to load, making it much easier and faster to interact with the system.
- iii. **Customized Reports** - This is a service that allows stakeholders to manage the reports they require, so that the system never dictates how or in what format reports are displayed, and each user can tailor a set of reports to their specific needs.

2.4 COMPARISON BETWEEN THE EXISTING SYSTEM AND OUR SYSTEM

SI. No	Paper Title	Methodology	Advantages	Limitations	Difference to us
1	An Online Course Registration System for the Faculty of Engineering in Peradeniya.	The project was separated into three sections: Online Registration, which is their system's initial project, and depending on Data Access and Web security [2].	reduced the burden of all parties, Reduce errors, Save time	it lacked ongoing connection with students in the updates of the student's registration status, it also lacked accountability	Short message service, Upgrading the system
2	A model for web-based course registration systems	Key features such as searching for courses, enrolling in a class, dropping a class, and displaying a weekly timetable are readily available to users [4].	Save time, Did not to use pen and paper, or other tools. Receive immediate feedback from their action.	do not have upgrading system,	Upgrading the system
3	Online Registration System Web Portal	Ala'a M. Al-Shaikh of the Institute of Public Administration (IPA) Dammam in Saudi Arabia worked on the development of a web-based application that was conceived, built, and implemented as a web portal that benefited several parties involved in the Associate-Degree General Examination [7].	Save time, reduce errors, reduced the burden of all parties, easy process. Allow students to register remotely	Do not have short message service, do not have upgrading system, do not customized reports.	Short message service, having upgrading system, reports are well decorated.

4	An Implimentation of An Online Based Registration System in Tertiary Institutions In Zimbabwe	The research was implemented at Bindura University of Science Education for Computer science students. The research provided a platform of registering online for students at or outside campus. The implementation was as follows, 1st stage involves the insertion of student's names and their previous results into the database. 2nd phase involves the interfacing of users with the online registration system [3].	Reduce cost, save time, Reduce Errors, Allow students to register remotely	Don't have Notification or short message service	Short message service, having upgrading system, reports are well decorated.
5	Online course registration system.	The Online Course Registration project was implemented successfully using the Apache Server with MySQL running as the back-end database and PHP used as the server-side language [5]. The implementation methods were chosen carefully taking into consideration the possibilities of hosting this project online in a server after the semester.	Save time and energy, make the manual system easy, reduce cost, reduce error	Documents are not well decorated, poor design.	Documents are well decorated, Attractive design, upgrading system.
6	An Online Course Registration system.	An Online Course Registration system for University of Dataville was developed with a frontend web interface and a back-end database [6]. A Database system had to be chosen as the back end such as Oracle, MySQL, Microsoft SQL Server, DB2, and Access. A web server had to be chosen for the front end such as Tomcat, Glassfish, Run, etc. A server-side language had to be chosen such as PHP, JSP, ASP, etc.	Save time and energy, reduced the burden of all parties, easy process, Reduce errors	Do not have notification facility.	Having notification

7	Development of Online Student Course Registration System	Implementing the Online Student Course Registration System, the registration procedure has been simplified. The students can access the registration portal online either from a computer or a smart phone and fill the necessary information and submit it for further approval [1].	Save time and energy, allow student to make registration remotely, cost effective, more secure.	User interface is good.	User interface is better than this system and our system is more secure and well decorated documentation.
8	Online Student Registration System.	The purpose of this SRS document is to allow the registration of students in particular course. It is intended to be complete specifications of what functionality the admission provides. It will also facilitate keeping all the records of students, such as their id, name, address DOB, etc. So, all the information about a student will be available in a few seconds [8].	Save time, easy process.	Documents are not well decorated, poor design	Attractive design, well decorate documents.
9	Online registration system (A case of Methodist University College Ghana)	To obtain information about the student registration system, it was necessary to interview students, the responsible staff like the Faculty Officers and staff of the Programming Unit. Getting to know how the University conducts its registration helped flag any apparently unusual aspects. Understanding the concerns of students helped to incorporate them in the development of the proposed system [9].	Save time and energy, save cost, allow student to make registration remotely, attractive interface.	do not have upgrading system	Having upgrading system,

10	Development of electronic student course registration system.	“Electronic Students Course Registration System” is the central part of the educational administration system, which consists of undergraduate course registration, graduate course registration, retaking and retesting, dropping the course in the middle phase and information exchange, etc [10].	Students are able to make their course registration remotely, easy process, save time, reduce cost.	Documentation is not well decorated, User Interface is not good.	User Interface is Eye catching, well decorated documentation.
11	Design and Implementation of E-Registration System.	This project work Design and Implementation of an E-registration system in tertiary institutions will help enhance the efficiency of data capture and shortens registration processing time for both the students and the school. Its objective is to develop a registration software system that replaces the manual method of registration in Imo State Polytechnic Umuagwo [11].	Enable students to register remotely, shorten the registration procedure, cost effective, more secure.	Adequate maintenance of the IT infrastructure in order to minimize down times, ensuring the success of 100% migration to E-Registration.	Interactive design, user friendly design, More secure.

2.5 SUMMERY

All the research discussed above is important. There are some limitations / errors in these systems. However, none examines the usability of course registration systems. Is it simple for users to understand how to use a course registration system? Can they use it properly? Are they satisfied with the system? Such questions remain unanswered. In our project, we will develop and evaluate a model for web-based course registration systems. We believe that our work can fill a gap in the literature on usability of course registration systems.

CHAPTER 3

METHODOLOGY

3.1 METHODOLOGY

At first, we analysis our current course registration system, find out the difficulties of the current system and then we are going to create an “Online Student Course Registration System” to simplify the course registration procedure for students at a university.

3.2 ANALYSIS OF THE CURRENT SYSTEM

The existing manual system requires students to fill out two different forms known as blue form and white form. Blue form containing the students' personal data and course details for the next semester and the white one is the term charge receipt form. After filling those forms, they submit it to their individual course coordinator, chairman, and hall provost for approval. After taking approval students go to the bank for making payment physically, but there is a long line, so they will have to wait. After making payment students go to their department office and submit a copy of payment voucher. In this manual course registration system, students need too much time to complete their registration.

3.2.1 FLOWCHART OF THE CURRENT SYSTEM

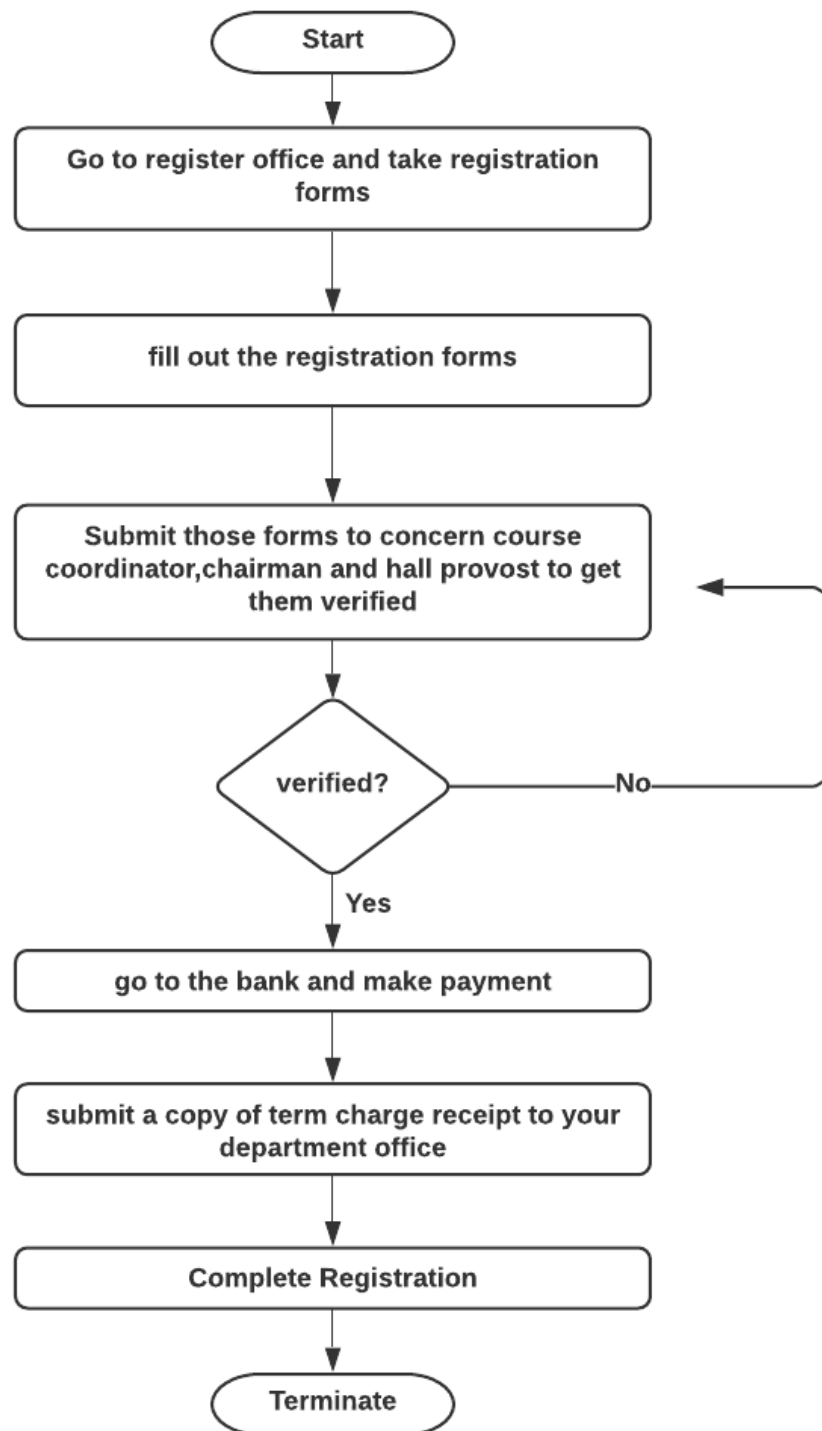


Figure 3. 1: Flowchart of the current manual system

3.3 PROPOSED SYSTEM

The web application system consists of admin module, student module, department/institute chairperson module, batch wise course coordinator module and so on.

3.3.1 Requirements Specification

System Users

- i. Student
- ii. Faculty Personnel
- iii. Chairperson/Director
- iv. Dean
- v. Register/Deputy Register
- vi. Controller of Examination/Deputy Controller of Examination
- vii. Directors of Accounts/Deputy Director of Accounts
- viii. Hall Provost
- ix. System Administrator

The requirements will be classified according to each user:

3.3.2 Functional Requirements

The system should specify how it should react to specific inputs and how it should behave in specific situations.

System Administrator

The system administrator is responsible for keeping the system running. so, he or she should have more access than any other user. The administrator should be able to reset passwords and add new users to the system. To achieve this, the following system functions should be available:

- i. Administrator should be able to view from the back end.

- ii. Add new users - should be able to add new users and activate/deactivate registered registration.
- iii. Update or Delete user profiles.
- iv. Reset passwords - administrator should be able to reset password for users who would have forgotten their passwords.
- v. Should have access to all system components.

Student

At first, the student must sign up or register by providing their personal and institutional information, if one already registered then he or she doesn't need to register every time, He or She just needs to use his or her email and password to enter their profile. For students, the following system functions should be available:

- i. Signup – Each student uses their personal information and institutional mail for signup.
- ii. Login - Each student uses institutional mail and password for login.
- iii. Change password - students should be able to change their passwords.
- iv. Select Term - The students should be able to select the term for the registration.
- v. Registration Request – The students be able to request for registration.
- vi. Payment – the student be able to make payment by using Bkash.
- vii. Logout – the student be able to logout his /her profile.

Chairperson/Director

The chairperson's main process is to approve the registration at a departmental level and should be able to see those students registered in his/her department. The following system functions are needed for the chairperson to achieve the above:

- i. Login –the chairperson should also have a unique login username and password.
- ii. Approve or reject the pending registrations in his/her profile.

- iii. View the list of those registered students.

Course Coordinator

The course coordinator's main process is to approve the registration at a batch level and should be able to see those students registered in his/her batch. The following system functions are needed for the course coordinator to achieve the above:

- i. Login –the course coordinator should also have a unique login username and password.
- ii. Approve or reject the pending registrations in his/her profile.
- iii. View the list of those registered students.

Hall Provost

The hall provost main process is to approve the registration at a hall level. The following system functions are needed for the course coordinator to achieve the above:

- i. Login –the hall provost should also have a unique login username and password.
- ii. Approve or reject the pending registrations in his/her profile.

3.3.3 Use Case Diagram of The Proposed System

A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. Use case diagrams are employed in UML (Unified Modeling Language), a standard notation for the modeling of real-world objects and systems.

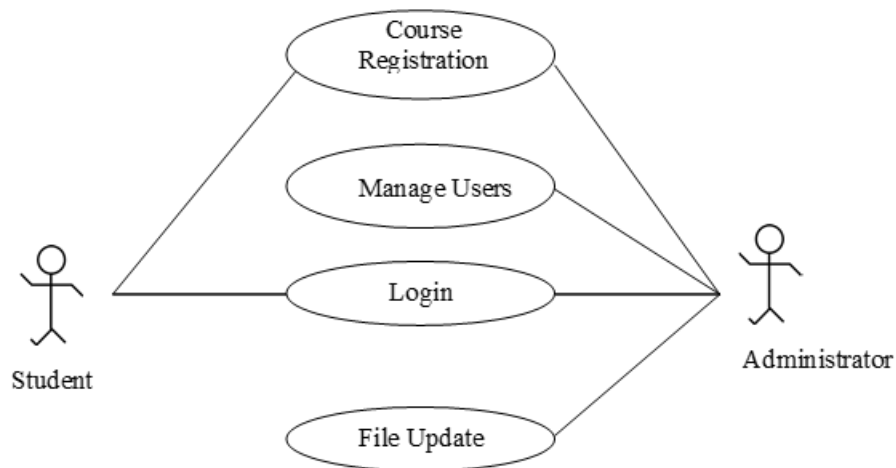


Figure 3.2: Use case diagram for admin and student

This diagram is showing what a student or administrator can do with this system. The student can login, request for registration and the administrator also can login, manage registration procedure, manage users and update and delete file.

3.3.4 E-R Diagram of The Proposed System

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how “entities” relate to each other within a system. ER Diagrams are most often used to design or debug relational databases in the fields of software engineering, business information systems, education, and research. The ER diagram of our proposed system (online course registration system) is given below.

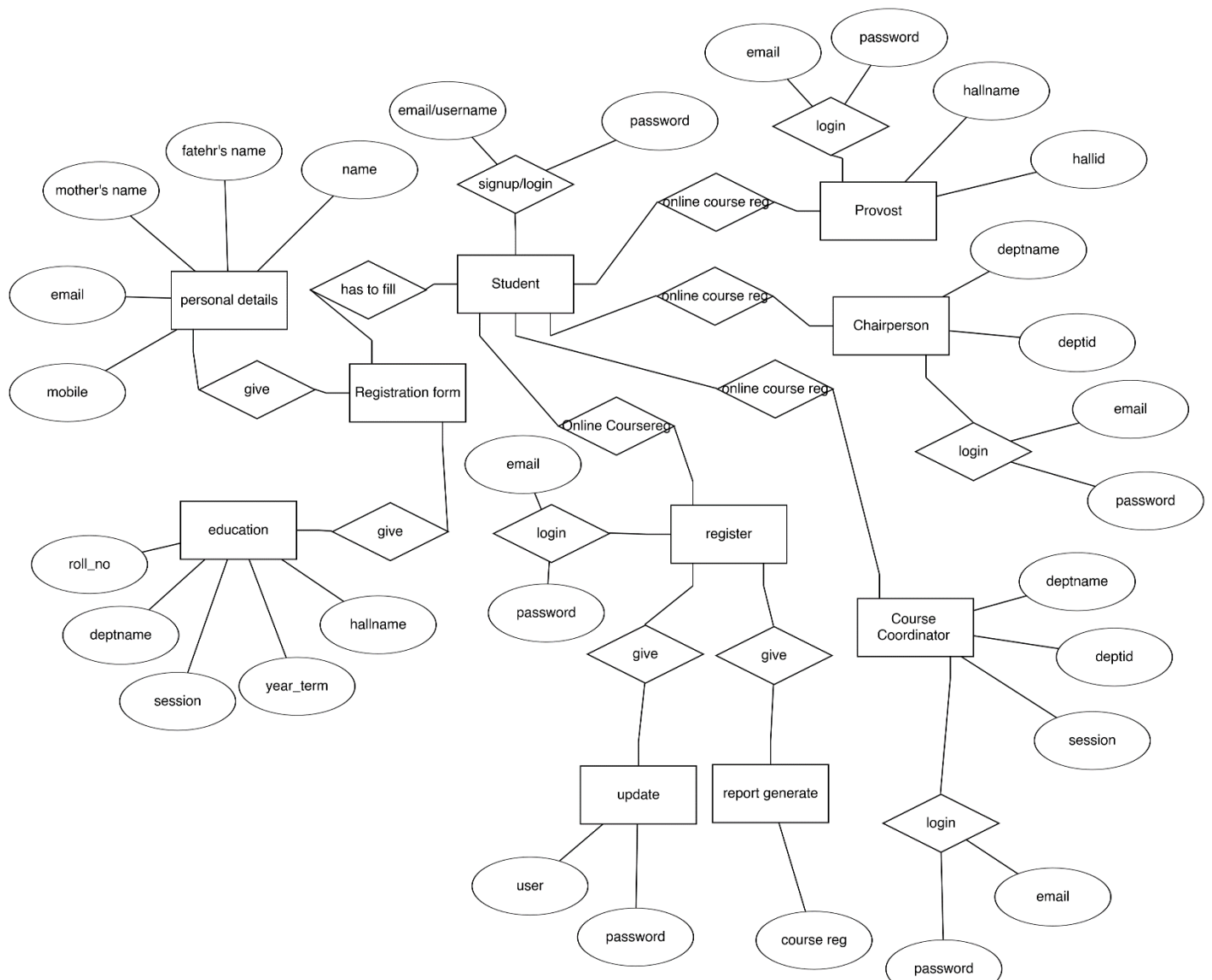


Figure 3. 3: E-R Diagram of online course registration system

3.3.5 DFD Diagram of The Proposed System

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of the system without going into great detail, which can later be elaborated. DFDs can also be used for the visualization of data processing.

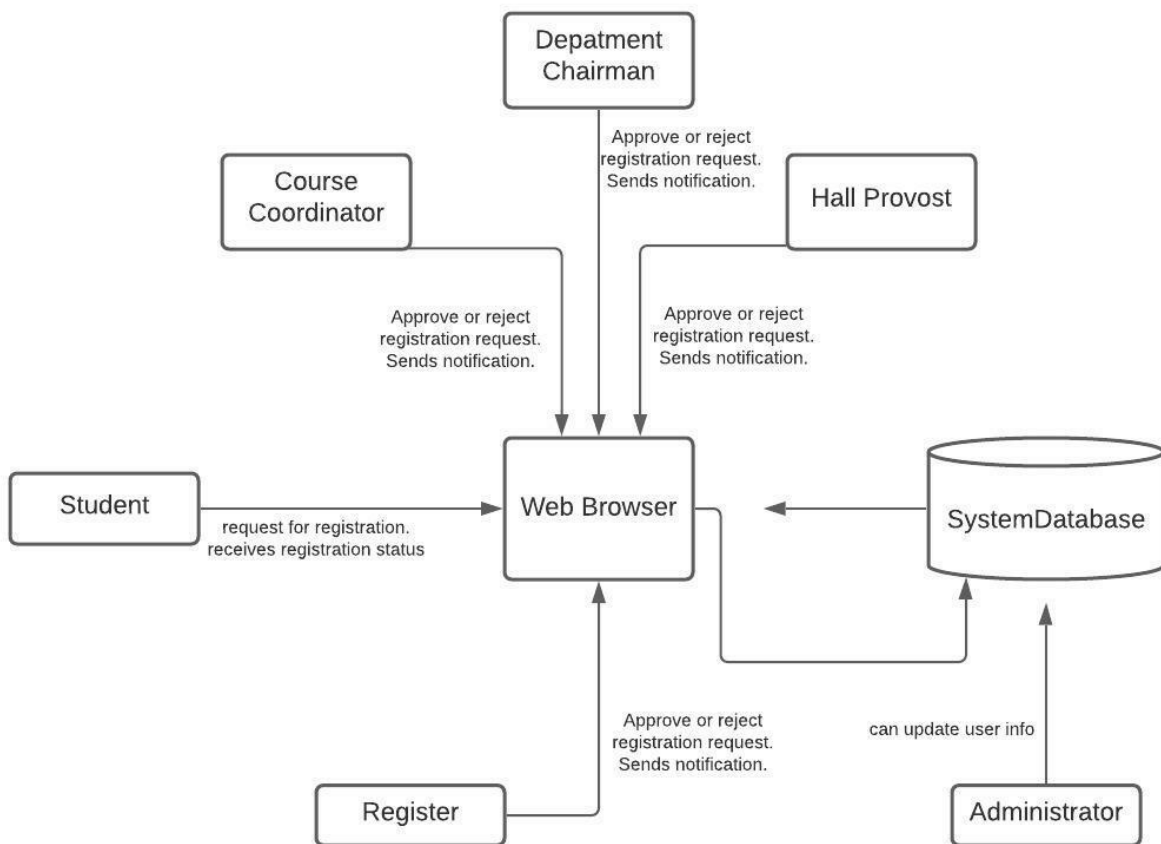


Figure 3. 4: Data Flow Diagram of online course registration system

3.3.6 Level-0 DFD For Administrator

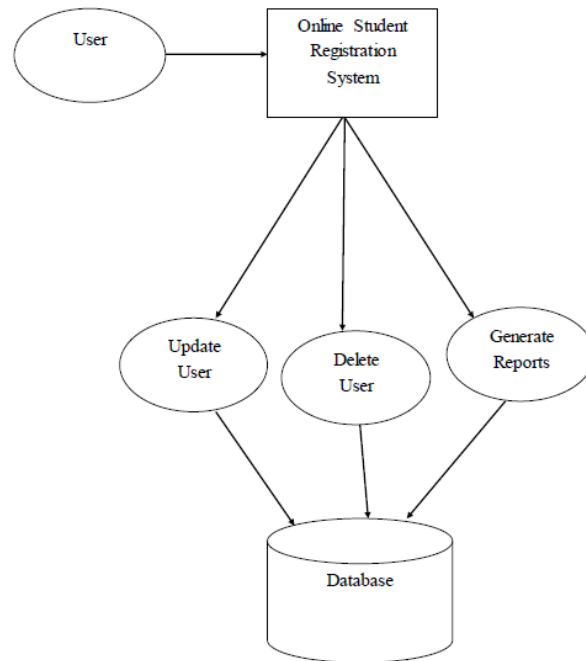


Figure 3. 5: DFD For Administrator

3.3.7 Level-0 DFD For Student

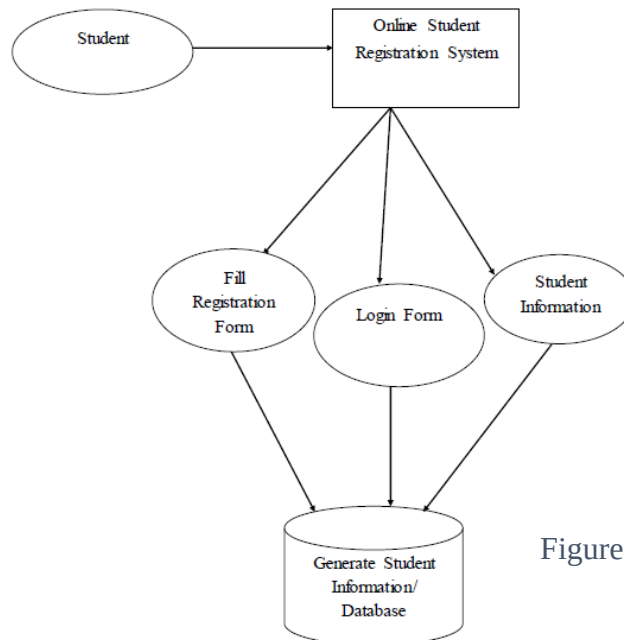


Figure 3. 6: DFD For Student

3.3.8 Payment Method

Trust Axiata Pay (Tap)



Trust Axiata Digital Limited is a Mobile Financial Company that was established on 29th May of 2020. Being authorized by Bangladesh Bank Mobile Financial Services regulatory authority it took the brand name ‘tap’. It is jointly ventured with ‘Trust Bank Limited, Bangladesh’ and ‘Axiata Digital Services Sdn Bhd, Malaysia’ and was formed under “Bangladesh Mobile Financial Services Regulations, 2018”. Having jointly incorporated as a private limited company with 51% share owned by Trust Bank Limited and 49% share owned by Axiata Digital Services Sdn Bhd, both the companies signed the joint venture agreement to operate Mobile Financial Services (MFS) and Payment Service Provider (PSP) operation in Bangladesh. With the underlying objective of ensuring a wide range of MFS for banked and unbanked population of Bangladesh, TADL has executed the launch of its MFS product on 30th December 2020 with the brand name “tap”, TADL offers the most convenient, flexible, secured, and affordable services and it purpose to gain a wide range of financial inclusion of people from all levels of income.

Beyond basic access and utilization of Mobile Financial Services, “tap” aspires to revolutionize the customer lifestyle by bringing innovation to the sophisticated digital payment movement system. The ultimate focus of ‘tap’ is to provide innovative services, make a strategic partnership with key players in the value chain and become one of the leading Mobile Financial Service providers in the country. It is a complete digitized payment ecosystem of the country. Currently, “tap” is running through a wide network of agents throughout urban and rural areas of Bangladesh with a fast-growing customer base.

Nagad



Nagad is poised to become an essential component of Bangladesh’s financial fabric. In alignment with the needs of the people and the development goals of the Bangladesh Government, Nagad envisions its role as a one-stop digital banking destination in partnership with the entire financial services industry. At Nagad, we believe that strategic partnerships are the key to providing the people of Bangladesh with the most relevant and impactful digital financial

services. We invite you to reimagine and leapfrog into the future of financial services alongside us. Bangladesh is a thriving economic playground, pulsing with optimism and aspiration. A population of 165 million people, nearly half of which are under 25, have awakened to the vast possibilities of the future. They eagerly adopt new ideas from the outside while also confidently forging their own path.

3.4 PROJECT DEVELOPMENT TOOLS

I use the following tools to develop my project.

3.4.1 Software Language Tools

MYSQL Server & Xampp:

Apache is the most widely used web server software. Developed and maintained by Apache Software Foundation. Apache HTTP Server is generally recognized as the world's most popular HTTP web server. It's fast and secure and runs over half of all web servers around the globe. MySQL is an open-source relational database management system (RDBMS) [12]. With PHP, we can connect to and manipulate databases. MySQL is the most popular database system used with PHP.

PHP:

PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites. PHP is a widely used, free, and efficient alternative to competitors such as Microsoft's ASP [13].

LARAVEL:

Laravel is a free, open source. PHP web framework, created by Taylor Otwell and intended for the development of web applications following the model–view–controller (MVC) architectural pattern and based on Symfony. Some of the features of Laravel are a modular packaging system with a dedicated dependency manager, different ways for accessing relational databases, utilities that aid in application deployment and maintenance, and its orientation toward syntactic sugar.

HTML5 & CSS3:

Hypertext Markup Language, a standardized system for tagging text files to achieve font, color, graphic, and hyperlink effects on World Wide Web pages. It is a markup language used for structuring and presenting content on the World Wide Web. It is the fifth and current version of the HTML standard.

CSS is the language for describing the presentation of Web pages, including colors, layout, and fonts. It allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. **CSS** is independent of HTML and can be used with any XML-based markup language.

Bootstrap:

Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains HTML, CSS and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.

JavaScript & jQuery:

JavaScript's is a scripting language. JavaScript is the programming language of HTML and the Web. The jQuery syntax is tailor-made for selecting HTML elements and performing some action on the element(s). Query is not a language, but it is a well written JavaScript code. As quoted on

official jQuery website, "it is a fast and concise JavaScript Library that simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development".

3.4.2 Hardware Interface

For server side and client side the following hardware interfaces are:

Processor:

Processor type: Pentium III-comparable processor or faster.

Processor speed: Minimum: 1.0GHz, Recommended: 2.0GHz or faster.

Memory:

- RAM: 2GB
- Minimum: 512 MB
- Recommended: 2.048 GB or more
- Maximum: Operating system maximum

Disk Space:

- Minimum 6 GB or above

3.4.3 Software Interface

Following software interfaces are:

Operating System: Windows XP /vista/7/8/10

Browser: Latest any kind of browser like:

- i. Mozilla Firefox
- ii. Google chrome

- iii. Internet Explorer
- iv. Microsoft Edge
- v. UC Browser
- vi. Opera

CHAPTER 4

RESULT

After implementing web-based student course registration system, it consists of two types of modules. One is the student module and another one is the admin module.

4.1 STUDENT MODULE

4.1.1 HOME PAGE

This interface will be shown when anyone types the url of our website into the address bar of a web browser. On the top right area there are two buttons, one is login and another one is signup. This page gives the students the ability to provide login or to start registering to the system for new users. This page gives the students the ability to provide login credentials or to start registering to the system for new users. Here all the updated notice will be displayed on the bottom right section.

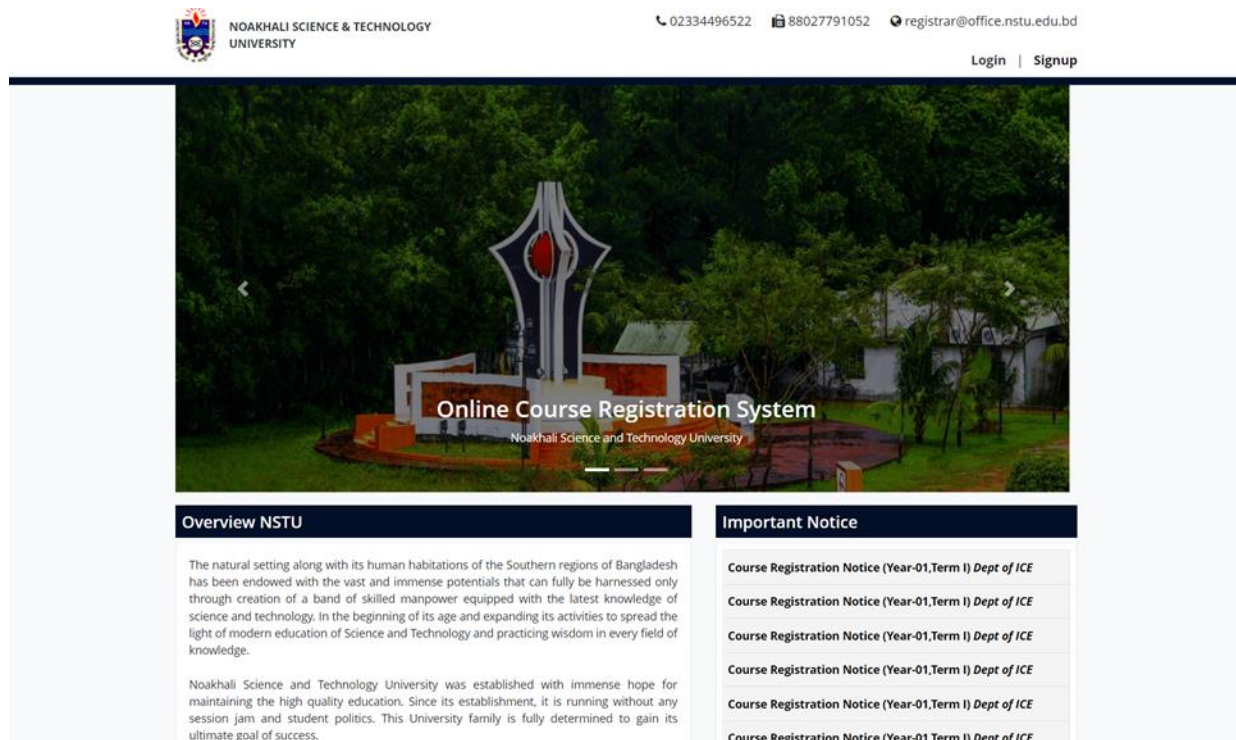


Figure 4.1: Home Page

4.1.2 SIGNUP PAGE

Students must fill-up the signup form by providing all the required information. Then they must be made a signup request by submit this form. This request will be accepted or rejected by the admin module.

The screenshot shows the signup page of the Online Course Registration System for Noakhali Science and Technology University. The page is titled 'Signup'. Below the title, there is a section for '1. Personal Information (All the information must be same according to your certificate)'. This section contains a form with the following fields:

- Name: Enter Your Name
- ছাত্র/ছাত্রীর নাম (বাংলায়): বাংলায় আপনার নাম লিখুন
- Father's Name: Enter Your Father's Name
- পিতার নাম (বাংলায়): বাংলায় আপনার পিতার নাম লিখুন
- Mother's Name: Enter Your Mother's Name
- মাতার নাম (বাংলায়): বাংলায় আপনার মাতার নাম লিখুন
- Date of Birth: mm/dd/yyyy
- Mobile Number: Enter Your Mobile Number
- Guardian's Name: Enter Your Guardian's Name

Guardian's Mobile Number:

Hall:

Blood Group:

Religion:

Nationality:

NID/Birth Registration Number
☐ NID Number
☐ Birth Registration

Gender:
☐ Male
☐ Female
☐ Others

Marital Status:
☐ Married
☐ Unmarried

2. Present Address

Select:
☐ Hall
☐ Others

3. Permanent Address

Division:

Upazilla:

Village/Moholla:

House No:

District:

Post Office:

House Name:

Road No:

4. Academic Information

Name of the Faculty:

Name of the Department:

Level:

Session:

Year,Term:

Student ID:

Student Image:
 No file chosen
Image must be (300x300) and Maximum size 100kb

5. Login Information

Email:

Password:

Password must be at least 8 characters

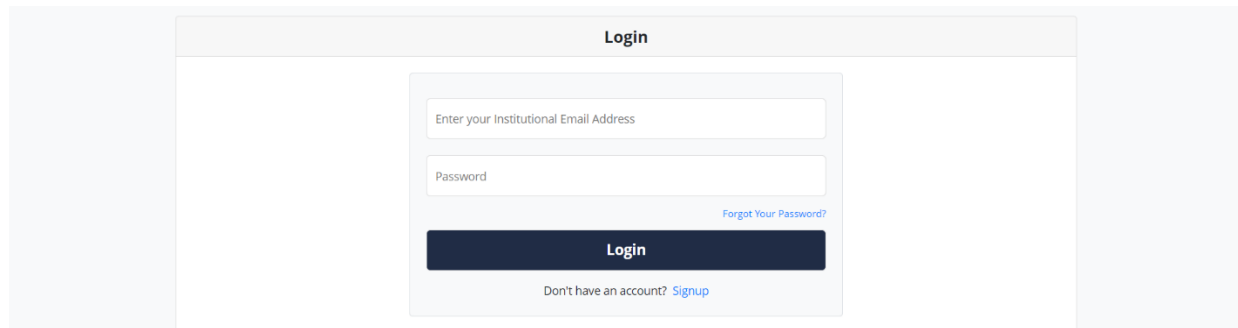
Confirm Password:

[Already have an account ? Login](#)

Figure 4.2: Signup Page

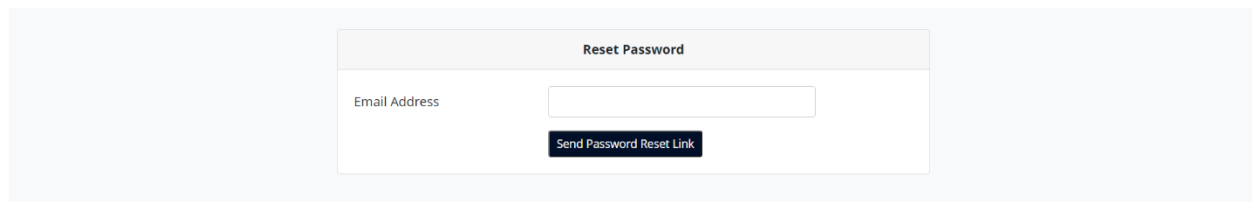
4.1.3 LOGIN PAGE

After approving the signup request form the admin module, an email will be sent to their email from admin, then student will be able to login our website by entering their email and password. If anyone forget their password, they will be able to change their password from this page.



The login page features a central form with a title 'Login'. It contains two input fields: 'Enter your Institutional Email Address' and 'Password'. Below the password field is a link 'Forgot Your Password?'. A dark blue 'Login' button is positioned below the inputs. At the bottom of the form, there is a link 'Don't have an account? Signup'.

Figure 4.4: Login Page

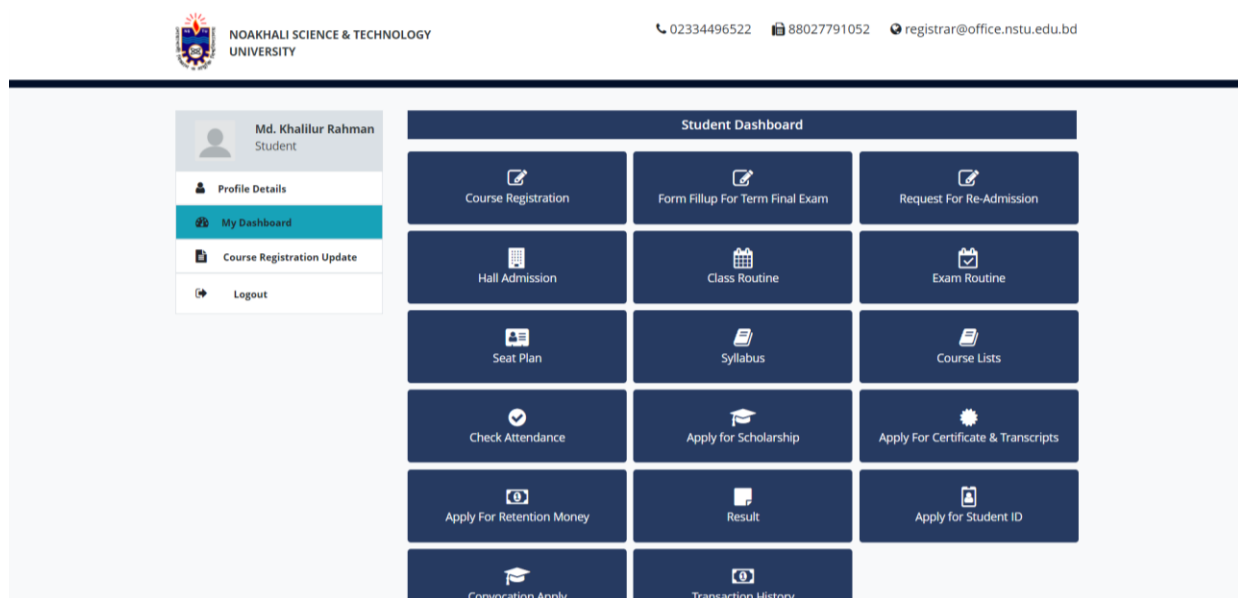


The reset password page has a title 'Reset Password'. It includes an 'Email Address' input field and a dark blue button labeled 'Send Password Reset Link'.

Figure 4.3: Reset Password

4.1.4 STUDENT DASHBOARD PAGE

After login, the student will go to their profile, and then they will see student dashboard. Here they will see several buttons, here they will see a button name as Course Registration. By clicking this Course Registration button, they will start their registration process.



The student dashboard is titled 'Student Dashboard' and is for user 'Md. Khalilur Rahman Student'. The left sidebar contains links: 'Profile Details', 'My Dashboard' (highlighted), 'Course Registration Update', and 'Logout'. The main area displays a grid of 15 buttons for various student services:

- Course Registration
- Form Fillup For Term Final Exam
- Request For Re-Admission
- Hall Admission
- Class Routine
- Exam Routine
- Seat Plan
- Syllabus
- Course Lists
- Check Attendance
- Apply for Scholarship
- Apply For Certificate & Transcripts
- Apply For Retention Money
- Result
- Apply for Student ID
- Convocation Apply
- Transaction History

Figure 4.5: Student Dashboard

4.1.5 COURSE REGISTRATION NOTICE

By clicking course registration button, they will see the registration notice.

The screenshot shows the 'Course Registration Notice' page. The sidebar on the left contains the user's name 'Md. Khalilur Rahman' and the role 'Student', along with links for 'Profile Details', 'My Dashboard', 'Course Registration Update', and 'Logout'. The main content area is titled 'Course Registration Notice' and displays the following information:

- Start Date: 2022-03-16
- End Date: 2022-03-24
- Extended Date: 2022-03-28

The notice is in Bengali and discusses the registration process for the 2021-22 academic year. It mentions the university's name, Noakhali Science and Technology University (NSTU), and provides contact information. The notice also includes a signature of the Registrar and a reference to the university's website.

Figure 4.6: Course Registration Notice

4.1.6 COURSE REGISTRATION TYPE PAGE

Here students will see a dropdown option, from here students will select their course registration type (i.e., regular or backlog) which shown in below picture.

The screenshot shows the 'Course Registration Type' page. The sidebar on the left contains the user's name 'Md. Khalilur Rahman' and the role 'Student', along with links for 'Profile Details', 'My Dashboard', 'Course Registration Update', and 'Logout'. The main content area is titled 'Course Registration Type' and displays a dropdown menu with the following options:

- Regular
- Select Course Registration Type--
- Regular
- Backlog

Figure 4.7: Course Registration Type

4.1.7 COURSE REGISTRATION FORM

Here all the information will auto show from their profile except registration year and term, here they'll see a dropdown to select their registration year and term, after selecting they'll see their course details according registration term which shown in below picture.

**NOAKHALI SCIENCE & TECHNOLOGY
UNIVERSITY**

02334496522 88027791052 registrar@office.nstu.edu.bd

**Md. Khalilur Rahman**
Student

Profile Details

My Dashboard

Course Registration Update

Logout

Course Registration Form

Fillup Your Course Registration Form

Name of Student : Md. Khalilur Rahman

Roll Number: : MUH1711018M

Department : Information and Communication Engineering

Institute/Faculty : Faculty of Engineering and Technology

Session : 2016-2017

Year,Term :

Year-1, Term-II

Sl No.	Course Code	Course Title	Credit	Remarks	Select
1	ICE 1201	Electronics-I (Semiconductor, Semiconductor Diodes and Transistor)	3	Compulsory	☒
2	ICE 11203	Discrete Mathematics	3	Compulsory	☒
3	ICE 1205	Computer Programming with C	3	Compulsory	☒
4	HUM 1207	Financial and Managerial Accounting	2	Compulsory	☒
5	MATH 1211	Linear Algebra, Geometry and Trigonometry	3	Compulsory	☒
6	ICE 1202	Electronics-I (Semiconductor, Semiconductor Diodes and Transistor) Lab	1	Compulsory	☒
7	ICE 1206	Programming with C Lab	1	Compulsory	☒
8	ICE 1200	Seminar/Viva	1	Compulsory	☒

Credit Hours Completed and CGPA

Year-01

Term-01 :

Credit

GPA

« Back

Submit »

Figure 4.8: Course Registration Form

4.1.8 COURSE REGISTRATION UPDATE INFORMATION

In the student profile there is a button name “course registration update”. By clicking this button students can know their course registration updated status.

SI No.	Level	Student ID	Registration Type	Term	Signature				Payment	Action
					Course Co-ordinator	Chairman	Provost	Officer/Registrar (DR/AR)		
1	Honors	MUH1711018M	Regular	Year-1, Term-I					Pending	

Figure 4.9: Course Registration Update Information

4.1.9 PAYMENT SYSTEM

After signed from Course Co-ordinator and Chairman student will be able to make payment. By Clicking the ‘Payment’ button they will see a Payment ID. By using this payment ID they’ll have to pay via Nagad or Tap.

SI No.	Level	Student ID	Registration Type	Term	Signature				Payment	Action
					Course Co-ordinator	Chairman	Provost	Officer/Registrar (DR/AR)		
1	Honors	MUH1711018M	Regular	Year-1, Term-I					Payment	

Figure 4.10: Payment System

Payment

Payment ID : 1711018626901

Rule for Payment Through Trust Axiata Pay (Tap)

- Open Tap Mobile App
- Go to Main Menu by Entering Your PIN
- Select Pay Bill/Fee
- Select Tuition Fee
- Type "NSTU" or "Noakhali Science and Technology University" on The Search Bar
- Enter 20211100019 on the Receiver Bill Number input Field
- Type Amount
- Type PIN and Hold The Tap button until your transaction complete
- Return SMS You Will receive a Transaction ID
- Store Your Transaction ID
- Congratulations You've Successfully Completed Your Course Registration

Rule for Payment Through Nagad

- Open Nagad Mobile App
- Go to Main Menu by Entering Your PIN
- Select Bill Pay
- Type "NSTU" on The Search Bar
- Type "20211100019" on Student ID
- Registration Fee of Taka 1000 will be displayed as amount
- Type PIN
- Tap and Hold The Nagad Icon Button
- Return SMS You Will Receive a Transaction ID
- Store Your Transaction ID
- Congratulations You've Successfully Completed Your Course Registration

Figure 4.11: Rule for Payment Through Nagad and Tap

4.1.9 PAYMENT SLIP DOWNLOAD

After making payment student will be able to view and download their payment slip by clicking slip button. Students must be stored this payment slip. There are four parts of this payment slip. These are Part of the Registrar's Office, Part of the Department, Part of the Accountant, and part of the student. All parts must store his/her part.



নোয়াখালী বিজ্ঞান ও প্রযুক্তি বিশ্ববিদ্যালয়

নোয়াখালী-৩৮১৪

টার্ম চার্জ জমা দেয়ার রশিদ

শিক্ষাবর্ষ: 2016-2017

টার্ম: Year-1, Term-I

ক্রমিক নম্বর: 2345678

তারিখ: 12/01/2022

পেমেন্ট আইডি: 1711018626901 পেমেন্ট মাধ্যম: Nagad_test

রেজিস্ট্রার দপ্তরের অংশ

বিভাগের নাম: ইনফরমেশন এন্ড কমিউনিকেশন ইঞ্জিনিয়ারিং

হলের নাম: বীর মুক্তিযোদ্ধা আব্দুল মালেক উকিল হল

ছাত্র/ছাত্রীর নাম: মোঃ খলিলুর রহমান

পিতার নাম: মোঃ আব্দুল জলিল

মাতার নাম: হোসেনারা বেগম

স্মিথ কোড নম্বর: MUH1711018M

প্রভোক্তা
স্বাক্ষর ও সীল

পরিচালক/চেয়ারম্যান
স্বাক্ষর ও সীল

টাকা জমা দেয়ার খাত	খাতের বিবরণ	নির্ধারিত টাকা ও প্রথম টার্ম	মন্তব্য
এডমিশন ফি	বাৎসরিক	১০০০	
ক্রেডিট আওয়ার ফি	প্রতিটার্মে		প্রতি ক্রেডিট আওয়ার ফি ৫০ টাকা
স্টুডেন্ট ওয়েলফেয়ার ফান্ড	বাৎসরিক	১০০	
সিটি রেন্ট + ইলেক্ট্রিসিটি চার্জ	বাৎসরিক	০	আবাসিক ছাত্র/ছাত্রীদের ক্ষেত্রে প্রযোজ্য
সেন্ট্রাল লাইব্রেরি ফি	বাৎসরিক	৫০০	
সেমিনার লাইব্রেরি	বাৎসরিক	২০০	
ট্রান্সপোর্ট ফি	প্রতিটার্মে	৪২০	আবাসিক ছাত্র/ছাত্রীদের ক্ষেত্রে প্রযোজ্য
		৪২০	অনাবাসিক ছাত্র/ছাত্রীদের ক্ষেত্রে প্রযোজ্য
রিপিট পরীক্ষা	প্রতি কোর্সে		
বিলম্ব/জরিমানা ফি			
মোট টাকা দেয়ার পরিমাণ		৩৩৯৫	সকল বিভাগের ছাত্র/ছাত্রীর জন্য প্রযোজ্য

স্বাক্ষর কর্তৃক পূরণ করতে হবে

মোট: ৩৩৯৫ টাকা, কথায়: _____

বুকে পেয়ে অত্র রশিদে দস্তখত করলাম।

অফিসার
স্বাক্ষর ও সীল

ক্যাশিয়ার

Figure 4.12: Payment Slip

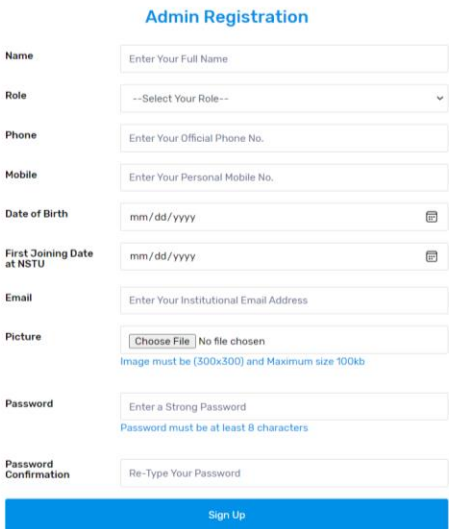
4.2 ADMIN MODULE

There is total 12 admins in our website. They are

- i. Super Admin
- ii. Course Coordinator
- iii. Chairman
- iv. Director
- v. Dean
- vi. Provost
- vii. Register and Deputy Register
- viii. Controller of examination and Deputy controller of examination
- ix. Director of Accounts and Deputy director of accounts

4.2.1 ADMIN SIGNUP

All admins must fill-up the signup form except super admin by providing all the required information. Then they must be made a signup request by submitting this form. This request will be accepted or rejected by the super admin module.



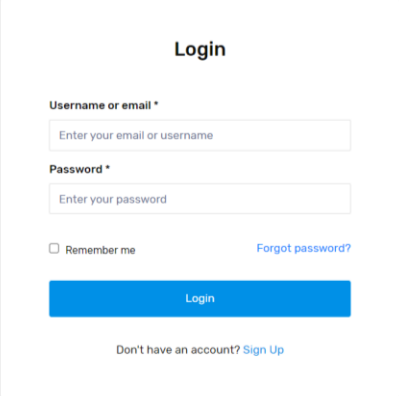
The image shows a web form titled "Admin Registration" centered between two large blue vertical bars. The form contains the following fields and elements:

- Name:** A text input field with the placeholder "Enter Your Full Name".
- Role:** A dropdown menu with the placeholder "--Select Your Role--".
- Phone:** A text input field with the placeholder "Enter Your Official Phone No.".
- Mobile:** A text input field with the placeholder "Enter Your Personal Mobile No.".
- Date of Birth:** A date picker field showing "mm/dd/yyyy".
- First Joining Date at NSTU:** A date picker field showing "mm/dd/yyyy".
- Email:** A text input field with the placeholder "Enter Your Institutional Email Address".
- Picture:** A file upload section with a "Choose File" button, the text "No file chosen", and a note: "Image must be (300x300) and Maximum size 100kb".
- Password:** A text input field with the placeholder "Enter a Strong Password" and a note: "Password must be at least 8 characters".
- Password Confirmation:** A text input field with the placeholder "Re-Type Your Password".
- Sign Up:** A large blue button at the bottom of the form.
- Footer:** Below the button, the text "Already have an Account? [Login](#)" is displayed.

Figure 4.13: Admin Signup Page

4.2.2 ADMIN LOGIN

After approving the signup request from the super admin, an email will be sent to their email from admin, all admins will be able to login their dashboard by entering their email and password. Note that chairman/director will only accept or reject course coordinator signup request. if anyone forget their password, they will be able to change their password from this page.

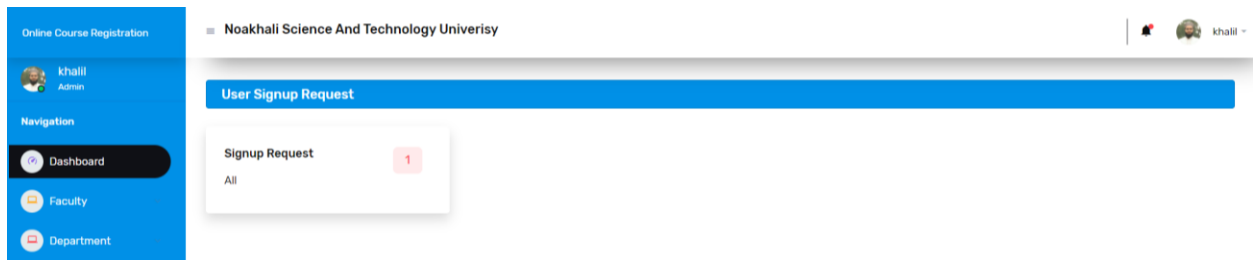


The image shows a login form titled "Login" centered on a light gray background. The form has two input fields: "Username or email *" and "Password *". Below the password field is a checkbox labeled "Remember me" and a link "Forgot password?". A blue "Login" button is positioned below these elements. At the bottom of the form, there is a link "Don't have an account? Sign Up".

Figure 4.14: Admin Login

4.2.3 SUPER ADMIN DASHBOARD

This system principal administrator is Super Admin. He is responsible for accepting or rejecting all the admins signup request except course coordinator. In super admin dashboard he can see all signup request.



The image displays the Super Admin Dashboard. On the left is a blue sidebar with the text "Online Course Registration" at the top. Below it is a user profile for "khalil Admin". A "Navigation" section contains links for "Dashboard", "Faculty", and "Department". The "Dashboard" link is highlighted. The main content area has a header "Noakhali Science And Technology Univerisy" and a user profile "khalil". Below the header is a blue bar labeled "User Signup Request". Under this bar is a white card titled "Signup Request" with a red badge showing the number "1". Below the card, the text "All" is visible.

Figure 4.15: Super Admin Dashboard

SI No.	Name	Roles	Email	Approved	Action
1	khalil	Admin	khalilstu@gmail.com		
2	Md. Ashikur Rahman Khan	Chairman	ashik@nstu.edu.bd		
3	Md. Sumon Khan	Director	sumon@gmail.com		
4	Md Abdur Rashid	Dean	rashid@gmail.com		

Figure 4.16: Admins Signup Request

When a new faculty / department is added to our university. Then it is necessary to add this faculty / department to our website. Super admin will do this.

Add Faculty

Faculty Name

Figure 4.17: Add new faculty

Add Department

Faculty

Short Name

Full Name

Figure 4.18: Add new department

4.2.4 COURSE CO-ORDINATOR DASHBOARD

In course coordinator dashboard he will see student's signup request. He is responsible for accepting or rejecting student's signup request. He's also responsible for accepting or rejecting student's course registration request.

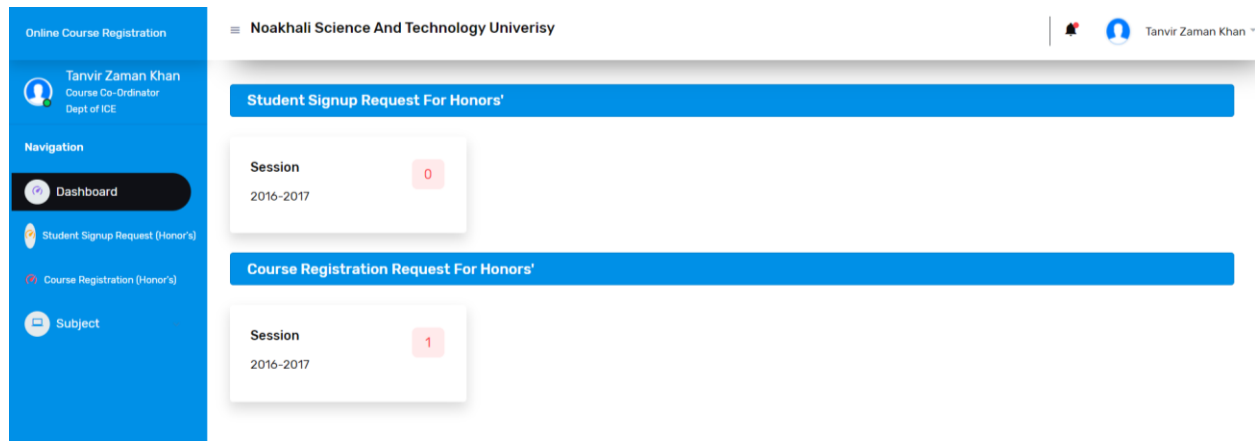


Figure 4.19: Course Coordinator Dashboard

He must verify a student by clicking Approval button. from here by clicking view button he'll see the student registration form details.

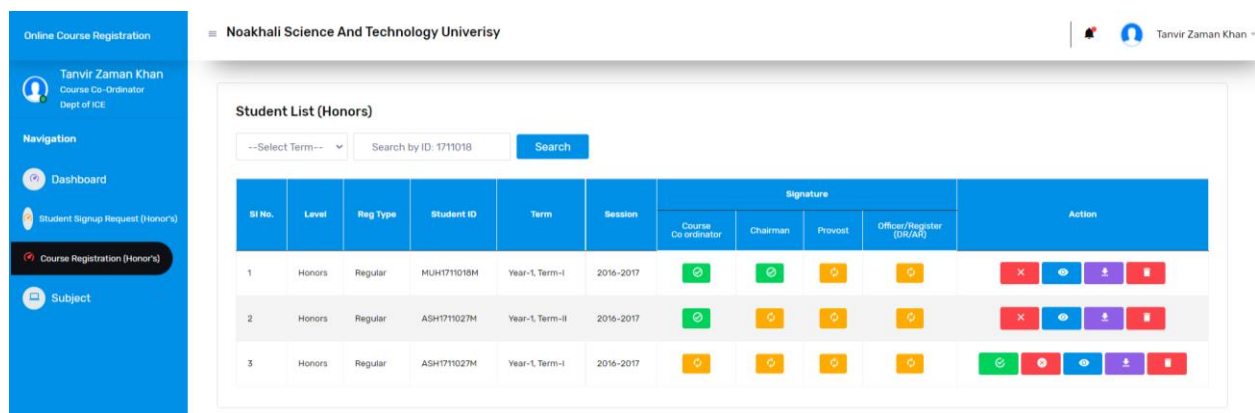


Figure 4.20: Student's Course Registration Request List

He can add a new subject.

The screenshot shows the 'Add Subject' form in the Noakhali Science And Technology University Online Course Registration system. The form is located in the main content area, and the left sidebar contains navigation links. The form fields are as follows:

Field	Value
Level	--Select Level--
Year & Term	--Select Year Term--
Course Code	ICE-4101
Course Title	Course Title
Course Credit	Course Credit Number
Course Type	--Select Course Type --

A 'Save' button is located at the bottom of the form.

Figure 4.21: Add Subject/Course

4.2.5 CHAIRMAN/DIRECTOR DASHBOARD

In chairman/director dashboard he will see student's and course coordinator signup request. He is responsible for accepting or rejecting student's and course coordinator signup request. He's also responsible for accepting or rejecting student's course registration request.

The screenshot shows the Chairman/Director Dashboard in the Noakhali Science And Technology University Online Course Registration system. The dashboard is located in the main content area, and the left sidebar contains navigation links. The dashboard sections are as follows:

Section	Count
Course Co-ordinator Signup Request	0
Course Registration Request For Honors'	2

Figure 4.22: Chairman/Director Dashboard

After verified from course coordinator, chairman/director will be able to verify a student by clicking Approval button. Once he/she verify a student he/she will be able withdraw this approval by clicking withdraw approval button. From here by clicking view button he'll see the student registration form details.

Online Course Registration

■ Noakhali Science And Technology Univerisy

Md. Ashikur Rahman Khan
Chairman
Dept of ICE

Navigation

- Dashboard
- Student Signup Request (Honors)
- Student Signup Request (Master's)
- Course Registration (Honors)
- Course Registration (Master's)
- Subject

Student List (Honors)

--Select Session-- --Select Term-- Search by ID: 1711018 Search

SI No.	Level	Reg Type	Student ID	Term	Session	Signature				Action
						Course Co-ordinator	Chairman	Provost	Officer/Registrar (DA/AA)	
1	Honors	Regular	MUH1711018M	Year-1, Term-I	2016-2017					
2	Honors	Regular	ASH1711027M	Year-1, Term-II	2016-2017					
3	Honors	Regular	ASH1711027M	Year-1, Term-I	2016-2017					

Figure 4.23: Student Course Registration List

4.2.6 PROVOST DASHBOARD

In hall provost dashboard, he/she can see how many students make course registration request and how many make payment, according to his/her hall. There is a button for each department. By clicking this button, he/she can know the department wise student course registration list.

Online Course Registration

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Helali

Helali

Navigation

- Dashboard
- Credit Fee
- Notice
- Course Registration (Honors)
- Course Registration (Master's)

Course Registration Request For Honors

Department	Count
CSTE Computer Science and Telecommunication Engineering	1
ICE Information and Communication Engineering	1

Figure 4.24: Provost Dashboard

There are several search options for hall provost, he/she can search by department name or session wise or term wise or student ID. He/She will be able to verify a student by clicking Approval button. From here by clicking view button he'll see the student registration form details.

Online Course Registration

Noakhali Science And Technology Univerisy

Helali
Deputy Register
Office of Register

Navigation

- Dashboard
- Credit Fee
- Notice
- Course Registration (Honors)
- Course Registration (Master's)

Student List (Honors)

--Select Department-- --Select Session-- --Select Term-- Search by ID: 1711018 Search

Sl No.	Level	Reg Type	Student ID	Term	Session	Signature				Action
						Course Co-ordinator	Chairman	Provost	Officer/Registrar (DA/AR)	
1	Honors	Regular	MUH1711018M	Year-1, Term-I	2016-2017					
2	Honors	Regular	MUH1711027M	Year-1, Term-I	2020-2021					

Figure 4.25: Student Course Registration List

4.2.7 REGISTER DASHBOARD

In register dashboard, he/she can see how many students make course registration request and how many make payment. There is a button for each department. By clicking this button, he/she can know the department wise student course registration list.

Online Course Registration

Noakhali Science And Technology Univerisy

Helali
Deputy Register
Office of Register

Navigation

- Dashboard
- Credit Fee
- Notice
- Course Registration (Honors)
- Course Registration (Master's)

Course Registration Request For Honors

Department	Count
CSTE Computer Science and Telecommunication Engineering	1
ICE Information and Communication Engineering	1

Figure 4.26: Register Dashboard

There are several search options for register, he/she can search by department name or session wise or term wise or student ID. He/She will be able to verify a student by clicking Approval button. From here by clicking view button he'll see the student registration form details. He can also download student course registration form.

Sl No.	Level	Reg Type	Student ID	Term	Session	Signature				Action
						Course Co-ordinator	Chairman	Provost	Officer/Registrar (DA/AR)	
1	Honors	Regular	MUH1711018M	Year-1, Term-I	2016-2017					
2	Honors	Regular	MUH1711027M	Year-1, Term-I	2020-2021					

Figure 4.27: All Course Registration List

Register will specify the amount of the credit fee by clicking credit fee button.

Figure 4.28: Add Credit Fee

Register will upload department wise course registration notice by clicking add notice button and he can monitor all the notices.

Figure 4.29: Upload Course Registration Notice

4.2.8 DIRECTOR OF ACCOUNTS DASHBOARD

In Director of accounts dashboard, he/she can view the total amount of payments by sector.

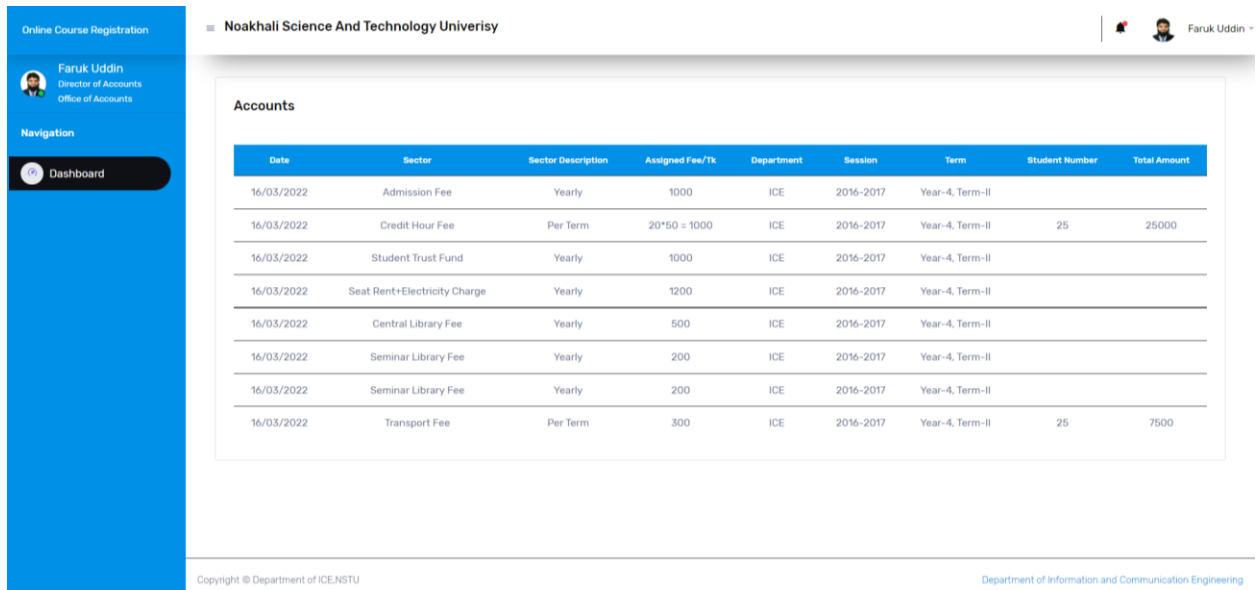


Figure 4.30: Director of Accounts Dashboard

CHAPTER 5

CONCLUSION & FUTUTRE WORK

5.1 CONCLUSION

In this project, our proposed system as named “Development of online student course registration system” will implemented for students. Basically, we focus on to simplify the course registration procedure for students at a university.

5.2 FUTURE WORK

We will add business value to improve our system. Our system will prepare for any university or institution where they are able to manage their course registration system. If any university or institution wants to take our system, we will provide our system in return for the money. We will add new feature in our system in future. More payment option will be added in future and make the site more user friendly for all types of users.

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