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Title: Online Academic Information Hub (OAIHUB)

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APPROVAL

This Project titled “**OAIHUB**”, Submitted by **Ruvina Parvin Dity**, ID No: **181-16-284** to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on 19-07-2020.

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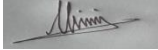
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Project Title

Online Academic Information Hub (OAIHUB)

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Executive Summary:

At present time people are looking forward on the modern technology. It can reduce the waste of time and can help to do the work very easily. Educational site is one of the most important things that we need to develop in our country. Our country is developing day by day. But we can't develop our educational system properly. So we need to take look to our educational system. "OAIHUB" is an online academic information hub.

Actually when students as well as parents wanted to admit their child in an educational institute they can't find the necessary information without going to the institute. As when students want to admit in the university they don't know, what the procedure of the admission is. It's a troublesome work for the students and parents. So if any web application is developed that will help them to find the necessary information by online. It can help all the students by giving the information about any academic institute. Like what is the facility of this institution, is there any boarding facility or is it the first ranked institute etc. It also helps the all the guardians as well. Everyone can take their necessary information from this web application.

And in the time of the university admission test students are step forward to the coaching center. Many students can't get that benefit because of the financial problem. So this application will be helpful for them because this also include the books, test papers, suggestions, previous year questions etc. They will find these things on the web application.

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Chapter 1: Introduction

At present time modern technology is so much important in our daily life. We can't think anything without it. So in this modern era we need to take forward steps to make our education system modern. In this modern era many people are facing problem when they trying to find actual information about an institution. So this "OAIHUB" system will remove these problem by getting the information over the internet. This application will be able to give the necessary information through the mobile phone or computer. So this will make their work very easy as they don't need to go to the institute for the needed information.

The purpose of the documentation is to clear the procedure of the project to any user. This will help the user to gain the knowledge of this system as they can easily use this properly. This will contain the proper information of the project.

Chapter 2: Initial Study

2.1: Project Proposal

2.2: Background of the project:

Our country is developing day by day. Our education system is also improved now-a-days. By this time we are facing trouble when we want to admit students in a new university. Because we can't find actual information for the targeted institute. To find the actual information they need to go the institute that is very difficult for most of the people. Like after S.S.C or H.S.C when students will admit into a new university they had more options to choose. But they don't know which institution is actually good for him or her. So after admitted into a university they find that it has more problems to continue in that institute. Then they face a big troublesome situation. So this application can help them by finding the necessary information. (Anon., n.d.)

Besides, teachers or any students can upload their questions, so that they can know the results of the questions. The questions are uploading in other options and any one can uploading the questions, the results, any books, test papers etc.

So if a web application is developed that can help students to remove these problems by getting them into trouble will be beneficial for all the students and their parents as well. So our “Online academic Information Hub” is that kind of application which is developed to help the students without facing any trouble.

2.2.1: Aims

The aim of the project is that making an online system for the students, teachers, and parents for making them beneficial by giving the information over the internet. (Wertheim, n.d.) The aims of the project is,

- A platform for students, teachers, and any kind of users.
- An online information hub for all over the students across the country.
- Reducing the trouble of students and their parents.
- Supporting all students by giving them necessary academic information.
- An education platform where the students can take help of their necessary things.

2.2.2: Objectives

- Introducing an online education system.
- Making an online application for students so that they can take the necessary information about an institution.
- Making a common platform for both students, teachers, parents.
- Helping students without giving them trouble.
- Produce a helpful documentation of this project.
- Making a bug free system.

- Creating a live chat option so that the users can communicate over the internet and solve their problems by discussing on that problems.

2.2.3: Scope of the project

The outcome of the project is to making an online platform where users can getting any information about an institution. Users can upload any question bank, answers, any books, test papers of previous years. Users can communicate on the chat box.

The scope of the project is,

- Students will be benefitted by books, literatures, questions banks etc.
- Students can make conversations among them.
- There is no instant notification process from the system for users. (Au, n.d.)

2.3: Problem Area

At the beginning of a student parents are confused for their children that which academy is better for their child. They cannot get any information which is exactly similar for their targeted institute. After college students are searching for university where they wanted to admit and suitable for them with all kinds of necessity or benefits.

By hearing from others they cannot get any exact information like, the expenses of university, admission process, necessary papers, boarding facility etc. They can get confused with the information because they cannot find the exact information about an institute.

Beside this, if any students need any previous questions in any urgent time they cannot find it early. Because books or papers are not stable in our hand. (Anon., n.d.) So in urgent situation it's very tough to find this. It is also a big problem for students.

2.4: Possible solution

After all these analysis we are step forward to make an application which can give the necessary information about all kinds of institute all over the country.

The online academic information hub “OAIHUB” can help the students and as well as teachers, parents by giving the necessary information. This system has a conversation system where they can communicate to each other. It can make a static communication between the users. (Anon., n.d.)

Users can find books, test papers, question banks etc. So if they need anything they can find it on the “OAIHUB”. So it make the solution of the problems easily.

Chapter 3 – Literature Review

3.1 Discussion on problem domain based on published articles

In our country education system is developing day by day. Our education site is developing but our system is not improving as much. We cannot think anything easily about this. In our country, we are studying sitting in the class room seeing on the board in front of us. But earth is growing old and system is developing day by day. (Anon., 2018 april)

In this world other country is using their technology for study which make their work so easier. But in our country we are not improve us in this section.

4.2 Discussion on problem solutions based on published articles

In this present situation we can step forward by presenting the online education system. If we provide an application which can be able to find the necessary information about all the institution or any other school, colleges, universities etc. Users will be benefitted by this system. They also can find any updated information

in this system within the phone over the internet. So we are step toward for making the online academic information hub “OAIHUB”. This will help all the students by giving the necessary information. This will make their work easier.

- **Comparison of leading solutions-**

- **Best Features:**

- ✓ Provide the information in separate menu bar. Like, school, college, university, national university.
- ✓ Provide the books, test papers, questions bank etc.
- ✓ Exam sections is also include here.
- ✓ Monitoring and controlling the user’s activities.
- ✓ Keep conversations between the users.

- **Strength of the system:**

- ✓ This system can be used in different devices. Like, laptop. Desktop, smart phones, tablets.
- ✓ User can discuss anything in the user forum.
- ✓ User can find any questions from the previous that are uploaded.
- ✓ Students can get to know the admission procedure through this system.

- **Limitations of the system:**

- ✓ User cannot edit or delete any information of their own.
- ✓ User cannot see their uploaded files.
- ✓ This system is built for provide information to users but not for the admission process.

4.3 Recommended approach

Analyzing the features, limitations, strengths of this system, some features are need to develop and adding to this system.

- Adding on the user management system, edit or update their information.
- Deleting the user’s information if needed.
- Adding new sessions.

Chapter 4 – Methodology

Methodology provides the guideline to develop a system with suitable and appropriate with project nature. So a brief discussion is provided explaining chosen methodology with justification for the proposed system “OAIHUB” in this section.

4.1 What to use

I have followed the Dynamic System Management Method (DSDM) that is under agile framework to develop the proposed system. The DSDM is used for developing the modern user interfaces. It help to choose the best solution with the limited budget and try to deliver early as possible. It can provide the fundamental pieces for designing a programs for desktop or mobile applications. (Anon., n.d.)Beside this, as it is follows the agile framework and our project is also based on the agility. So it makes our work easy. DSDM follows the MoSCoW techniques for completing the project. MoSCoW stands for, Must have: It describe the essential requirements. Without these requirements the system is become useless.

Should have: It describe important requirements. But these requirements are not essential.

Could have: It describe the desired requirements. But it's not necessary for the project development.

Won't have: It describe the requirements which are agreed to develop for the project.

4.2 Why to Use

I have choose this methodology because this of it follows agile framework. Agile support the group work and make our work easy. And we followed this rules of agility so that we can complete our project successfully. This techniques allowed to define clearly the strategic goals and focus to deliver the project timely with best possible solution. So I have chosen this method. (Anon., 2003)

5.3 Sections of methodology

The sections of DSDM methodology are given below,

1 Pre-project

Pre-project phase involve the starting analysis work. Like, project proposal, feasibility study, budget fixing, and resource allocation. It identified the problems of the project and find out the solution.

2 Feasibility study

Following the pre-project solution it create the project plan, technical solution and also estimate the budget in this section. It also identified the project benefit and expected earnings from the project.

3 Requirement Gathering

In this phase, requirements are gathered for completing this project. Requirements are depends on how users will be benefitted and work efficiently with this application.

4 Requirements analysis and prioritization

Gathering all the requirements it needs to analysis which requirements are prioritized first. Requirements can be used in different ways so these are need to find out which ways are effective for this project.

5 Exploration

The requirements are examined and investigate for the further development. All the diagrams, models, prototypes will be high level and send it to the next step. It allows some testing so that all are work properly.

6 Engineering

Engineering is the step where the actual development is take place. The development process is going forward with iterative way. If anything need to change in this system then this send it to the back step and refine it. The engineering stage also allow the testing.

7 Deployment

This is the final stage of development. Here the product prepared to launched with their desired output and send it to the users. But if anything wrong is found then it send back to the engineering and solve it. So that users don't get dissatisfaction. (Anon., 2011, Aug 20)

5.4 Implementation plans

The developed system needs to implement here. The project is developed in an iterative way and prepared it to release. It devises a plan for carrying out the system with all the requirement. Users are ready to use this system with the best possible output. (Anon., dec 14, 2017) So that users can benefitted with this system. And they can satisfy by use it.

Chapter 5 – Planning

Project planning is the plan which is help to work with a scheduled plan. It is the part of a project management plan that help to develop the project with its goals and objectives. It divide the working process into small parts. It also include different areas of the project like as test plan, risk management, work breakdown structure, time boxing etc. The whole project planning are discussed here.

5.1 Project Plan

5.1.1 Work break down structure (WBS)

Work break down structure is that which break the whole project into small parts. It helps to assume time duration of the work and finish the work within the time. (Anon., 2015) It divide the works into functions, sub functions and create a schedule to finish it timely. It is very helpful because if WBS is not create then it will be a mess. For making

this project successful it is needed to make a work break down structure. The chart is given below,

ID	Task description	Start date	End date	Duration
1	Introduction	03/11/2019	03/11/2019	1d
2	Initial study	04/11/2019	15/11/2019	12d
3	Literature Review	16/11/2019	23/11/2019	8d
4	Methodology	24/11/2019	10/12/2019	18d
5	Planning	12/12/2019	26/12/2019	15d
6	Feasibility Study	17/12/2019	18/12/2019	12d
7	Foundation	20/12/2019	29/12/2019	10d
8	Exploration	01/01/2020	11/01/2020	12d
9	Engineering	12/01/2020	26/01/2020	15d
10	Deployment	28/01/2020	28/02/2020	30d
11	Testing	01/03/2020	22/03/2020	22d
12	Implementation	25/03/2020	15/04/2020	20d
13	Critical Appraisal	16/04/2020	25/04/2020	10d
14	Conclusion	26/04/2020	30/04/2020	5d

5.1.2 Time boxing

Time boxing is the most important part of DSDM Atern. As I am following DSDM methodology this is must of making the time boxing. Time box is like that it is contain a certain time for completing a task. This mainly do the resource allocation task. Time boxes for this project are given below,

Time box	Task name	Resource allocation
T-1	Introduction	Analyst
	Literature review	Analyst
T-2	Initial Study	Analyst
	Methodology	Analyst
	Planning	Analyst, Developer
T-3	Feasibility	Analyst, Developer
	Foundation	Analyst, Developer
	Exploration	Analyst, Developer
T-4	Exploration	Analyst, Developer
	Engineering	Analyst, Developer
T-5	Engineering	Analyst, Developer
	Deployment	Developer, Tester
T-6	Testing	Developer, Tester
	Implementation	Analyst, developer, Tester
	Critical appraisal	Analyst
	Conclusion	Analyst

5.1.3 Gantt Chart

Gantt chart will show the project start date to end date activity with bar. It is effective tool that is used here. This project Gantt chart is given below,

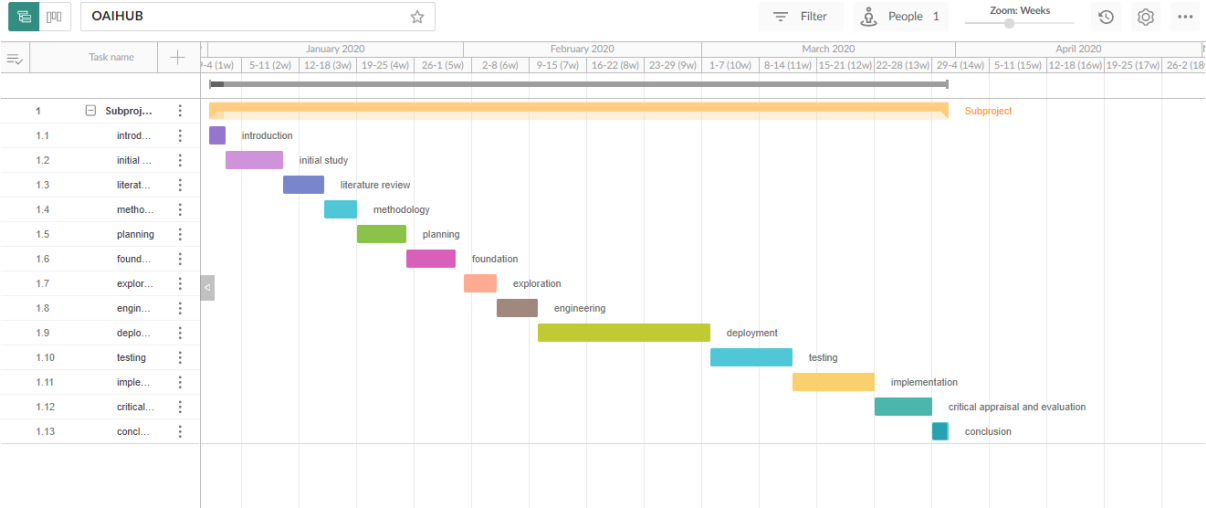


Figure 1: Gantt chart

5.2 Test Plan

5.2.1 Testing against time boxes

All the time boxes of this project which are included in this document are deliverables. So, all these are needed to testing here. Testing mainly helps to make sure about the outcome of the project. So that testing is the most important task of any project. The testing against time boxes are given below,

User Name	Example	Role	Example	
Time box Id				
Time box contents				
Test type	Test steps	Expected result	Actual result	Comment
Unit test				
Integration test				

System test				
Acceptance test				
Security test				
Usability test				
Reliability test				

5.2.2 Required test

There is mainly two types of software testing. One is functional testing and other is nonfunctional testing. These are described below,

5.2.2.1 Functional testing

Unit testing

Unit testing is the part of a testing which include a small part of the system. We give an input on the system and check the output of this specific code. If the code work correctly and give the result as the requirement then it is correct.

Integration testing

Integration testing involves some units. It is mainly the combination of some units where more than one unit is working together. These units are checking first if it works correctly then the integration testing also work properly.

System testing

System testing is the testing which tests the whole system. In the system testing it needs to ensure that is the system working properly, is it act like the requirement added. If all this are working properly then the system testing is successful.

Acceptance testing

Acceptance testing that is the final stage of functional testing. In this testing user are involve for give their opinion if it is work. This testing method is doing for take the users

satisfaction about this testing. It is also check the business outcome and it is prepare to use.

5.2.2.2 Non functional testing

Security testing

Security testing is that which test is the system secure or not. It is mainly check that is the system is secure from the external attacks.

Usability testing

Usability testing is that which mainly test the system is useful or not. It involves the user friendliness, user experience test etc. It is mainly ensure that by using this system users can be satisfied or not.

Reliability testing

Reliability testing is that which test the system is reliable or not. It also involve users who give their opinion. It is mainly test the no failure between the system operations and work it properly on each operations.

5.2.3 Test case

Test case mainly describes some variable or conditions that are used to test the system. These are used to test the system if it is work properly. It test that is it can fulfill the user expectation. For this system a test case is used that is given below,

Test case id			
Test type			
Test description			
Test steps	Expected result	Actual result	Comment

5.2.4 User acceptance testing

User acceptance testing is that which is mainly doing by the users. By the users it perform that is the system work properly or not. The testing method also verify that all the requirements are performing correctly, the users are satisfied by using this system or not, all the requirements are meet their goal or not. It is done in different environment. The user acceptance test for this system is given below,

Test case id		User Name	
Test type		Acting As	
Test description			
Pre-Condition of test			
Test steps	Expected result	Actual result	Comment

Chapter 6 – Feasibility

Feasibility is give the overview of technical and business perspective of this project. It analyzing the project that if it is feasible in the market or not. Feasibility study provides an outline of the business case, solution and feasibility prototype.

6.3 All possible type of feasibility

6.3.1 Economic feasibility

Economic feasibility is that which defines the financial aspects of this project. All kinds of costs that are included in this project are assessed in this part. Economic feasibility study helps to determine whether in the real world the project become successful or not. It counts all the costs from the beginning of the project to the end of this project. The economic feasibility of this project is given below,

No	Name	Cost
1	Hardware Cost	\$580.89
2	Software Cost	\$495.47
3	Hosting Cost	\$110.21
4	Others Cost	\$230.23
Total Cost		\$1421.8

6.3.1.1 Hardware Cost

The calculation of the total cost the hardware that are needed in this project is showing with the table below,

SL No.	Hardware Name	Quantity	Price
1.	HP Notebook – 12df0030nr (HP, 2017)	1	\$480.89
2.	Tenda R7600 AC1780ndual Band Smart Wi-Fi Router	1	100.00
Total Hardware Price			\$580.89

6.3.1.2 Software Cost

All the software that are used in this project are included here. First of all we need the internet and browser so that many more software or tools can be used over the internet browser. Beside the online tools we need many software applications. These are listed here with their cost,

SL no.	Software Name	Net Price	Total price
1.	Intelij Idea 2017.2.2x64	\$395.00	\$295.00
2.	MySQL workbench 8.0 CE	\$110.47	\$110.47
3.	Microsoft Visio	\$90.00	\$90.00
4.	Star UML	Free	\$0.00
Total Software Cost			\$495.00

6.3.1.3 Domain and hosting cost

This project is developed using the java programming language using the MVC pattern. It is a web application and that need to store on the web server. For this reason a domain and hosting is needed to keep the project on the live server. These cost are given below,

Domain: www.OAIHUB.com Cost: \$110.21
--

6.3.1.4 Other Cost

All the other costs are given below,

SL no.	Name	Cost
1.	Training cost	\$100.00
2.	Backup cost	\$80.23
3.	Maintenance cost	\$70.00
Total cost		\$230.23

6.3.2 Operational Feasibility

Operational feasibility is that which is generally monitor that how easily the systems are operated. It is also monitor the existing system and making comparison between the new system and old system. It create the reason behind why this system is useful for the users and how easily they used it. To provide a better operation feasibility in a system we need to consider the following steps,

- 6 The system need to develop with the simple and easy access.
- 7 The system need to be faster response system.
- 8 Provide feedback for anything wrong in this system.

6.3.3 Technical Feasibility

Technical feasibility is that which determining the technical solution of the proposed system.

The proposed system “OAIHUB” is developed using java, java script, jQuery, MySQL. All these are used in this system to managing all the data and input-output process. For controlling the database MySQL is used in this system. Sometimes technical difficulty is occurred and we are trying to make the solution of the problem.

6.4 Cost Benefit Analysis

Cost benefit analysis is the main analysis of the financial cost of the whole project. It defines the cost of the developing project. It helps to analyze how much profit how much profit should be earned by spending a certain amount of cost.

The estimation of cost benefit analysis of the proposed system is given below,

SL no.	Sector of expenditure	Year 1	Year 2	Total
1.	Hardware	\$580.89	\$390	\$970.89
2.	Software	\$495.47	\$220	\$715.47
3.	Development	\$2200	\$800	\$3000
4.	Management	\$1000	\$500	\$1500
5.	Server	\$110.00	\$100	\$210
6.	Others	\$230.23	\$180	\$410.23
Total Costs		\$4616.59	\$2190	\$6806.36

6.3 DSDM – good or not for this project

DSDM is “Dynamic System Management Method”. It helps to develop the project under the agile framework.

DSDM mainly focuses on make a best solution of the project and early delivery. It is a framework which work for the development of “off the shelf” solution. It aligned to the clearly defined strategic goals. It has some philosophy also. These are,

- It focuses on early delivery with the possible best solution within the proper budget.
- In this DSDM stakeholders are involve to clear their business objectives.
- Advocates to the incremental development system.

DSDM is suitable in that project which has business project, stakeholders clarify their objectives, involve profit or loss etc. OAIHUB is creating for the students, teachers, and many more users. There is no incremental process for any foundation. So DSDM is good but not suitable for this project.

Chapter 7 – Foundation

7.1 Overall Requirement List

The overall requirement list is done based on the end user’s demand and satisfaction. The list is given below,

7.1.1 Functional Requirements

- The admin should be able to add, update, and delete information on the different university or national universities section.
- Admin should be able to add new users to the system.
- Admin should be able to notify users about unnecessary things.
- Admin should be able to add sessions when in need.
- Admin should be able to add the question banks, books, test papers etc.

- Admin should be able to add exam for the users.
- Admin should be able to show the conversations of users.
- Admin has to be the option to block any users if anything wrong is done by them.
- Users can comments on the uploaded files.
- Users can give ratings on the uses of this application. (Anon., n.d.)

7.1.2 Non-Functional Requirements

- System need to be fast response.
- An easier and well-designed interface.
- The system should be easy to use for all kinds of user.
- Usability should be better and easily maintained.
- The system should be more secured.
- User's personal information should be well secured.
- The system should be more robust.

7.2 The Technology to be implemented

There are few types of technology that are implemented to make an efficient system. These different types of technology is used for different purpose. These are client server application and web server application.

7.2.1 Client server application

Client related server is that which is relate to the clients side server that configure the clients machines. It sends request to the remote server that are locate on the client machine. (Anon., 2012) The main features of the client's server are given below,

- It runs on multiple machines at the same time.
- It is a faster application that response so fast.
- It has some security risk.
- The application is a menu driven that has limited users.

7.2.2 Web application

Web application is that which is a computerized program and it stored on the web browser. There is no installation process because it stored on the web and run on the web browser on more than one machines at a time. Many people can access the browser from different places and can get the same data at a time. There are many features of webserver applications. (Anon., 2020) These are given below,

- Web server application is URL driven.
- The device which support the web browser can easily use this.
- It is a faster application.
- It has no limitations in use.
- It just need an internet access to use this.

7.3 Recommendations and Justifications

According to all these scenario of this “OAIHUB” project, it will be a system which can be used by all over the world. People can used it from various places of the world. There are many reasons to use the system. These are given below,

- There is no installation of this system to run.
- It just need an internet connections and a web browser to use it.
- Users can use it without any difficulty.
- The web browser can handle many users at a time though it make the system a little kind of slow.

Chapter 8 – Exploration

8.1 Old Full System Use Case

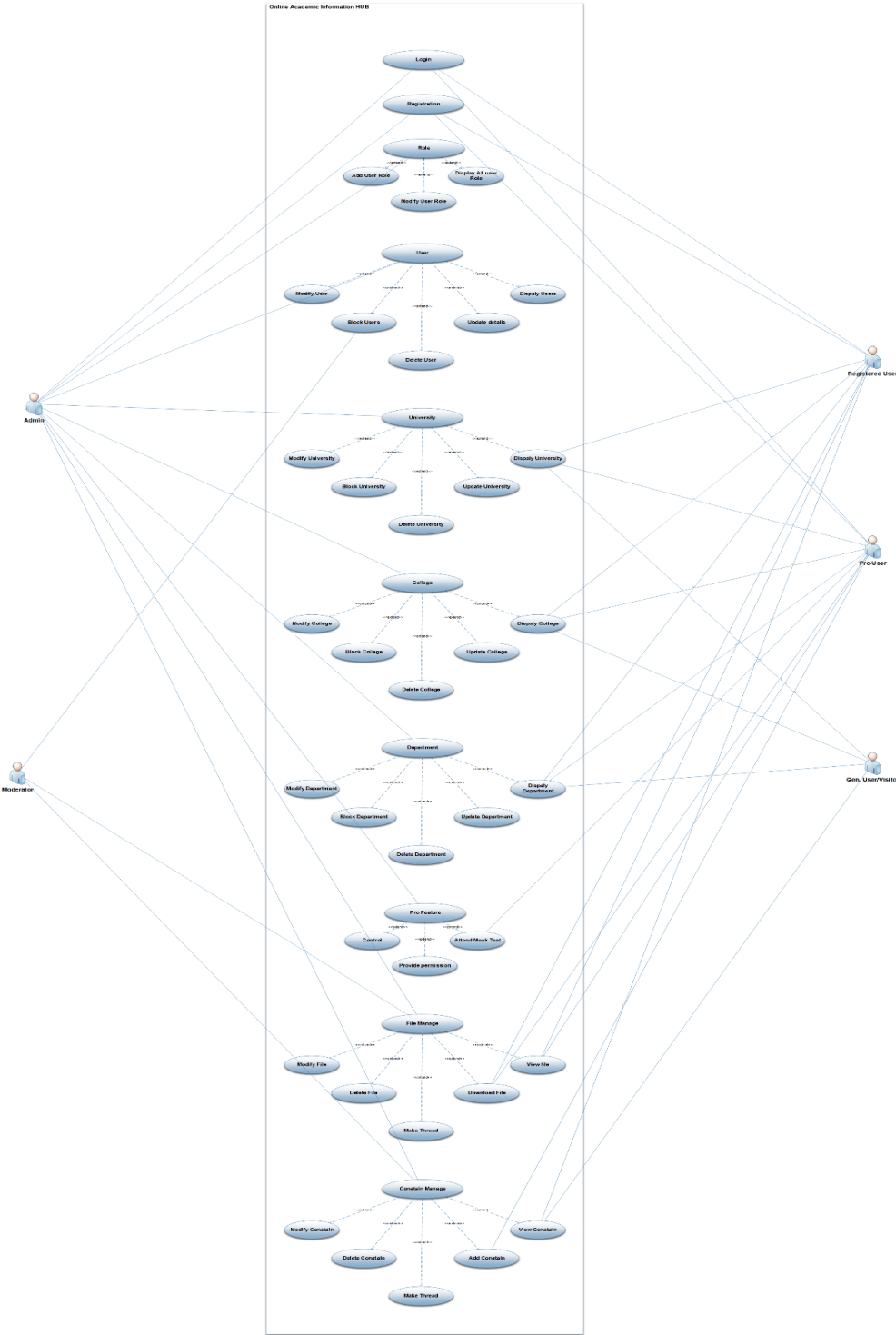


Figure: 2- Old full system Use case

In this “OAIHUB” application there are total 5 types of user. Every user has their own rule to use this system. They have various type of data access in this system such as:

- Admin: He/she can register themselves into the system and can login by their personal information. They can make and modify role in the system, can add user, display all user role. Modify user, block user, delete user, update user data those also can be accessible by admin. All type of University, College and Department related data can be display, blocked, modify or delete by the admin. They also have some pro feature such as control, provide permission and attend mock test (tester). All necessary file can be handle by the admin panel, modifying files, delete files, make thread, download file and view file are the admin panels task. Contain manage like modify, delete, make thread, add and view contain.
- Moderator: This panel has less power and access then the admin. Modify user, block user, delete user, update user data those also can be accessible by moderator panel. Necessary file can be also handle by the moderator panel. Modifying files, delete files, make thread, download file and view file are the admin panels task. Contain manage like modify, delete, make thread, add and view contain.
- Register user: This panel they can login and register in the beginning. They can see university, college and department data. From this panel they can also attend mock test. They will have access to view file and download them. They can able to add content and also view others.
- Pro-user: This panel members are the special then register member. This panel member can login and register in the beginning. They can view university, college and department all data. From this panel they can attend mock test. They will have access to view file and download them. They can also able to add content and also view others.
- General user/visitor: They have the less ability in this system. Visitor can register themselves. Then they can do many things. Without registration they can only view can view university, college, department data and some content.

8.2 Old Full System Activity Diagram

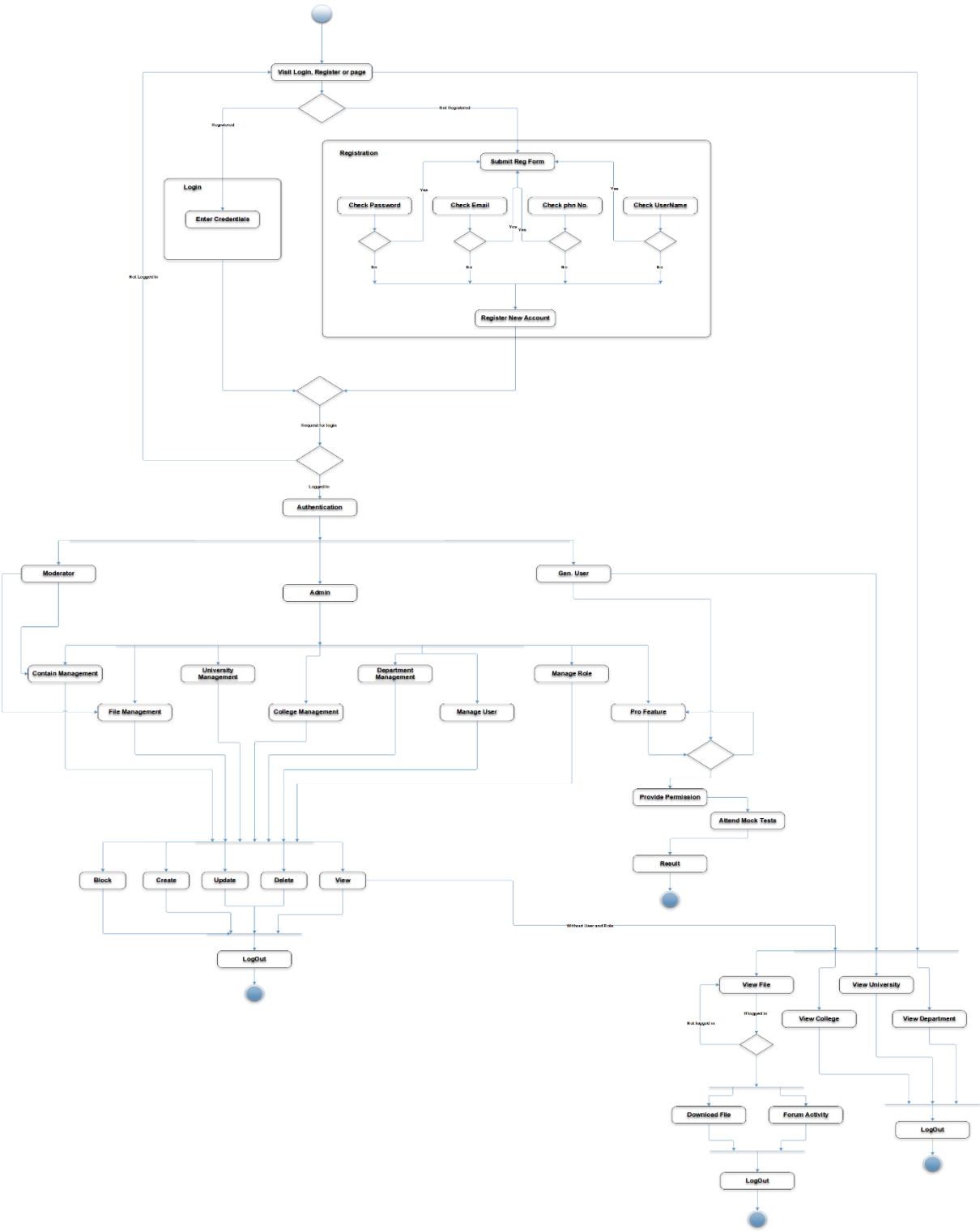


Figure 3: Old Full System Activity Diagram

In the activity diagram above the whole procedure that can be undertaken by a user are shown. If the user is registered, he will go the login page and log into the system providing valid user ID and password. If he is not registered, he will go to the registration or sign up page. He has to input some information like name, password and other relevant information. After signing up he will be able to go to the sign in page to enter the system. After signing in there will be three type of access. Those are admin, moderator and general user. Admin can create, delete, update and retrieve any data or account. Admin will also have to access to block any user. Moderator will have the access to the content management and file management. For general visitor there will be a view access where the user can only view the system and its contents. But if they want to download or download any content, they have to sign in there. After signing in they will have the access to pro features. In pro feature they can attend the mock tests from the question bank we have in our database. The admin will have the access to all the features like content, file management, University management, College management, department management, User management, role management and pro features. After using the system all kind of user will be able to log out from the system using a logout function.

8.3 Prototype of new system

Prototype means the system interface of the new system. This is that which turn to the real system interface. This project's different sections prototype is given below,

8.3.1 Signup Page

OaiHub

Email:
Your email

Password:
Password atleast 8 charecter

First Name
Your firstName

Last Name:
Your lastName

Mobile Number:
Your mobileNumber

Save New

Figure 4: Sign up feature

8.3.2 Login page

OaiHub

Email
Enter Email

Password
Enter Password

Login

Figure 5: Log in feature

8.3.3 Admin Page



Figure 6: Admin page

8.3.4 User Page



Figure 7: User Page

8.3.5 University view from user

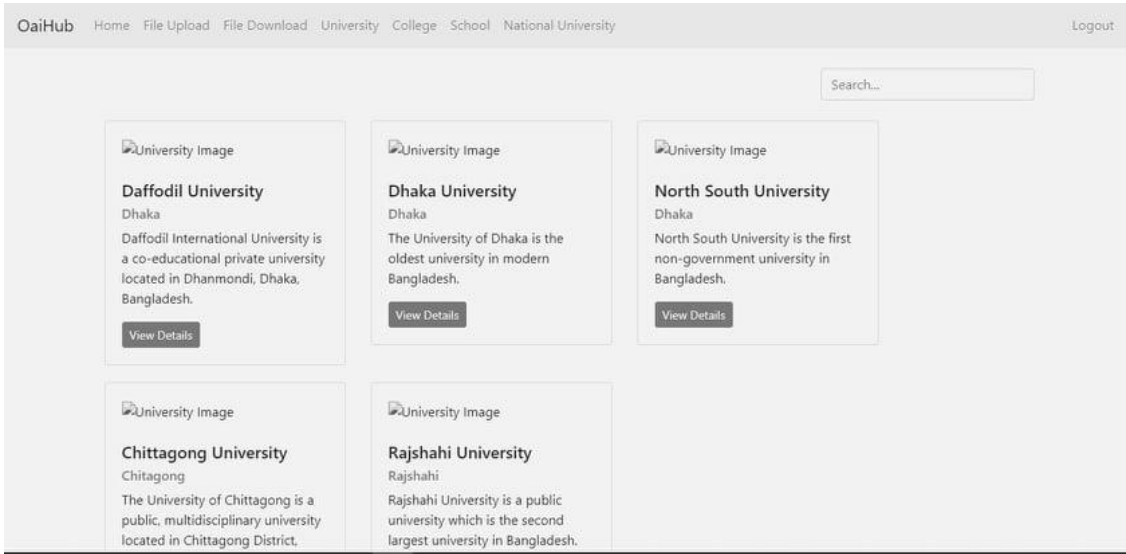


Figure 8: University view page

8.3.6 National University View page from users

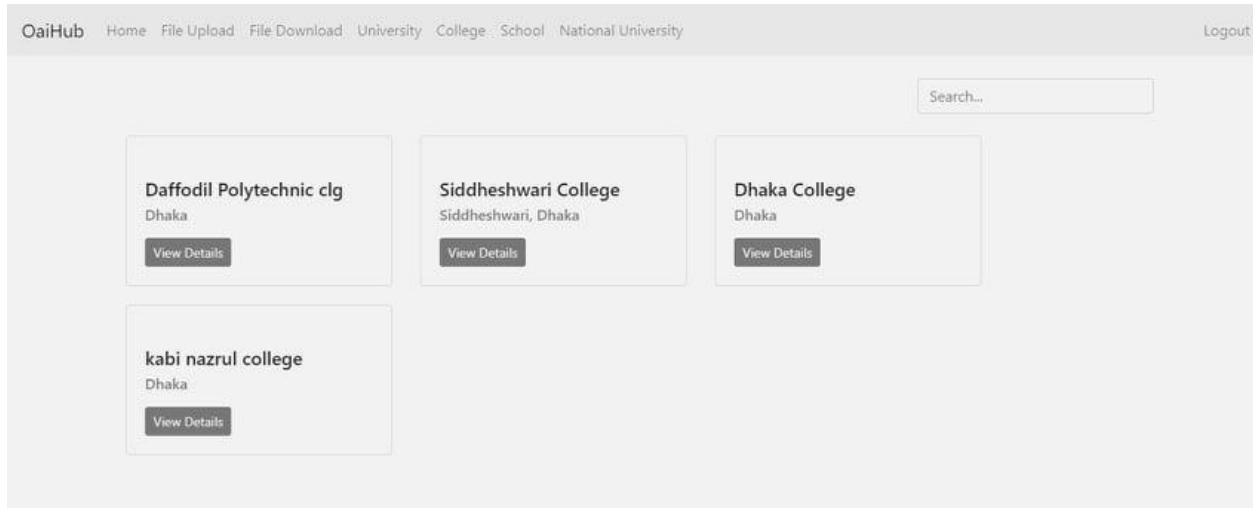


Figure 9: National University view page

Chapter 9 – Engineering

9.1 New System Modules

The new system modules of the proposed system given with the brief discussion,

9.1.1 Registration and login Module

In this system, there will be three types of user who will be logged in. They are admin, moderator and user. All have to need register first. The admin will add the new user to the system.

9.2 Use Case

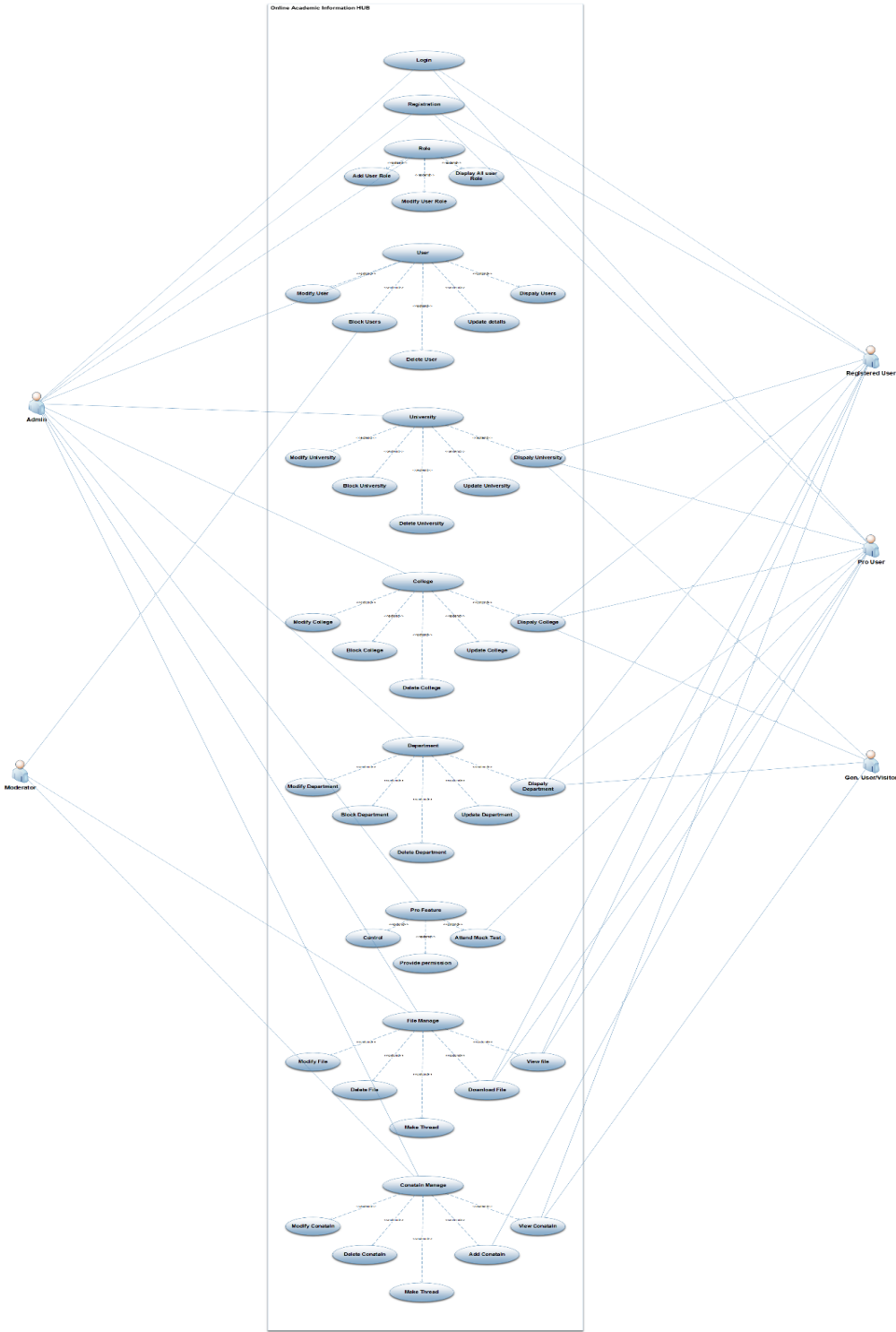


Figure 10: Use case diagram

Description:

The OAIHUB application has many types of users who has perform many task and they are as, admin, moderator, Register user, general user or visitors.

All these users are login with their personal information which they include in this system. Admin can add the users, delete or block users, add university, national university details, display information to the users etc. They also have some pro features such as control, blocked, modify or delete. Moderator can modify user information, block users, check all the things that doing by the users. And register users are usually use all these things that are admin and moderators are manage. And general users are only use by view the university, national university and some content.

9.3 Class Diagram

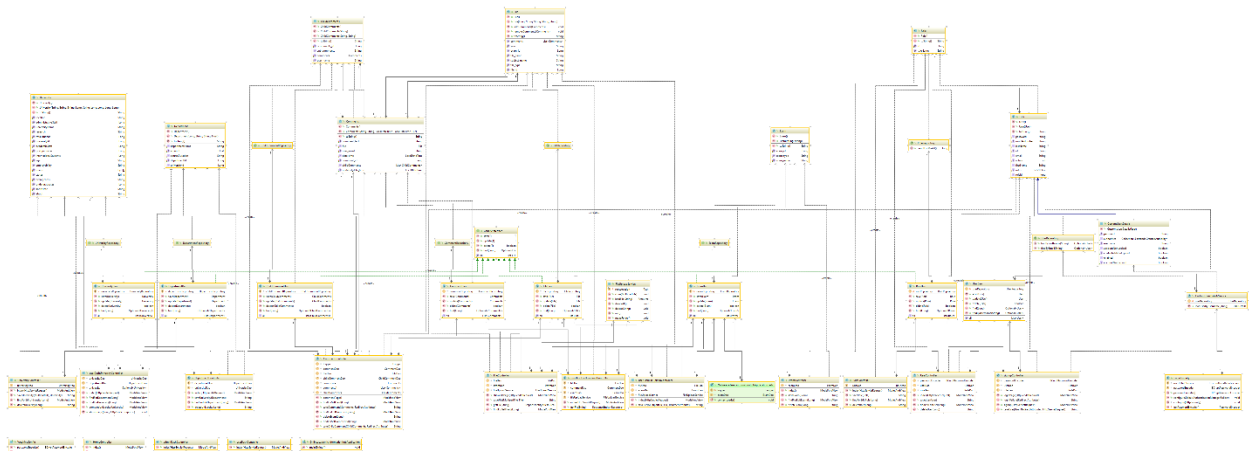


Figure 11: Class diagram

Description:

Class diagram is that which contains variables, methods and shows the relationship between them. It has a set of classes, interfaces, collaborations and their relationships. It shows the interactions between the classes that is used in this system. It represents the whole system in a diagram. This class diagram contains many classes like, university, department, user, user detail, files, exam, role etc. and all these class has so many attributes, methods.

Such as, university has university id, university name, location, total student, academic staff etc. Which shows the all information about a university. Department has, department id, department name, course duration, amount and also university id which act as a foreign key here. Department will represent the information of each university's information. User has user id, name, password, email, roles, role id etc. Role has role id, role name. Exam has exam type, exam name. All these classes with their attributes have relationships between them. By using this UML class diagram, we can show the whole system relationship how each of the table interact with each other.

9.4 ERD Diagram

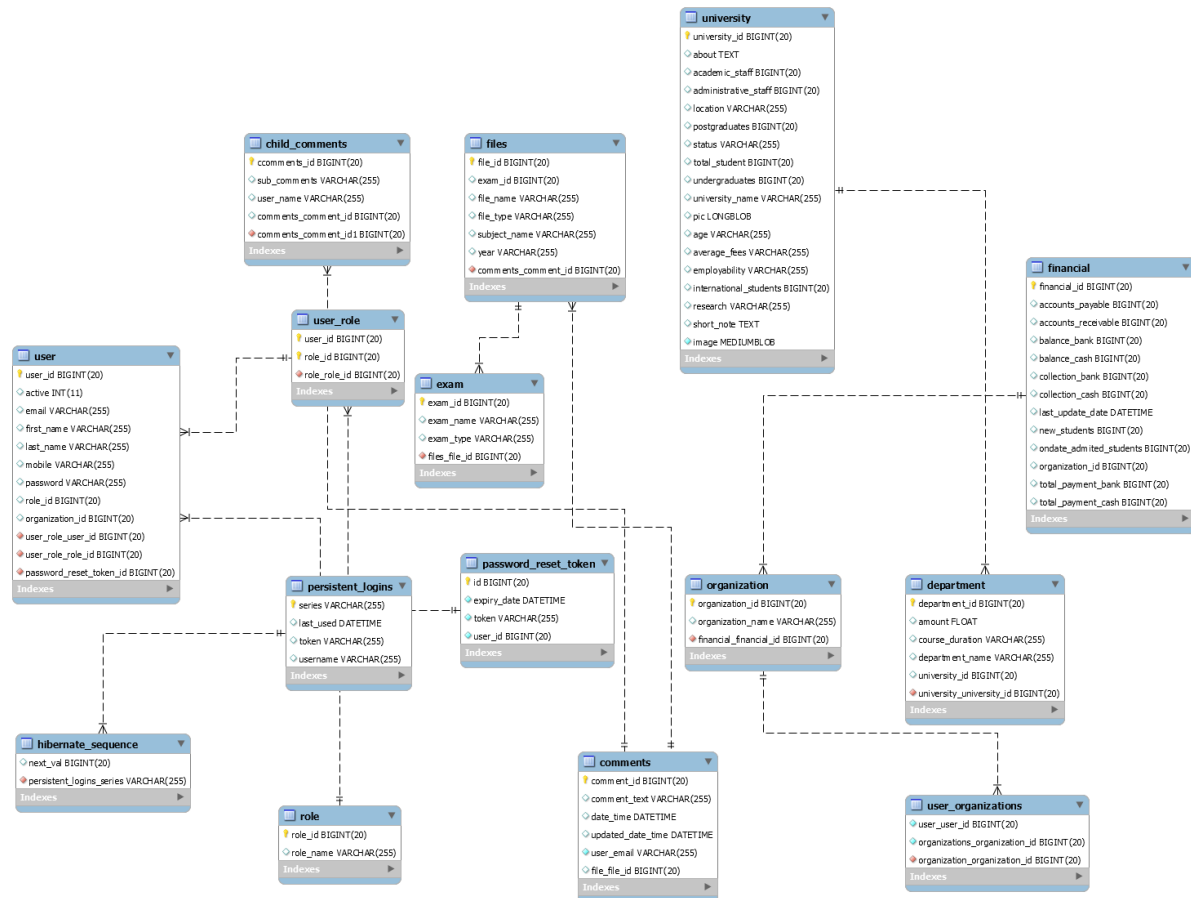


Figure 12: ERD diagram

Description:

An entity relationship diagram (ERD) shows the relationships of entity sets stored in a database. An entity in this context is an object, a component of data. An entity set is a collection of similar entities. These entities can have attributes that define its properties. By defining the entities, their attributes, and showing the relationships between them, an ER diagram illustrates the logical structure of databases. ER diagrams are used to

sketch out the design of a database. Entity user has user_id BIGINT(20) primary key. Child_comments has comments id BIGINT (20) primary key. user_role has two primary key as user id and role id BIGINT (20). persistent_logins has series primary key. University has university id. Department, user organization and finance all have their individual id as primary key. Role has role id as primary key. File has file id. Exam has exam id as primary id. Password reset token has also id has primarily. Organization entity has org id as primary key. Here entity User has many to 1 relation between entity user_role. Entity user has many to 1 relation between entity roles. Entity user role has many to 1 relation to entity password_reset_token. Entity hibernate_sequence has many to 1 relation between persistent_login. Child_comments entity has also many to 1 relation between entity comments. Entity comment has 1 to many relation to entity files. Entity files has 1 to many relation to exams. Entity University has 1 to many relationship between entity departments. Financial entity has 1 to many relation between organizations. Entity organization has 1 to many relation with entity user organization

9.5 Sequence Diagram

9.5.1 As an admin:

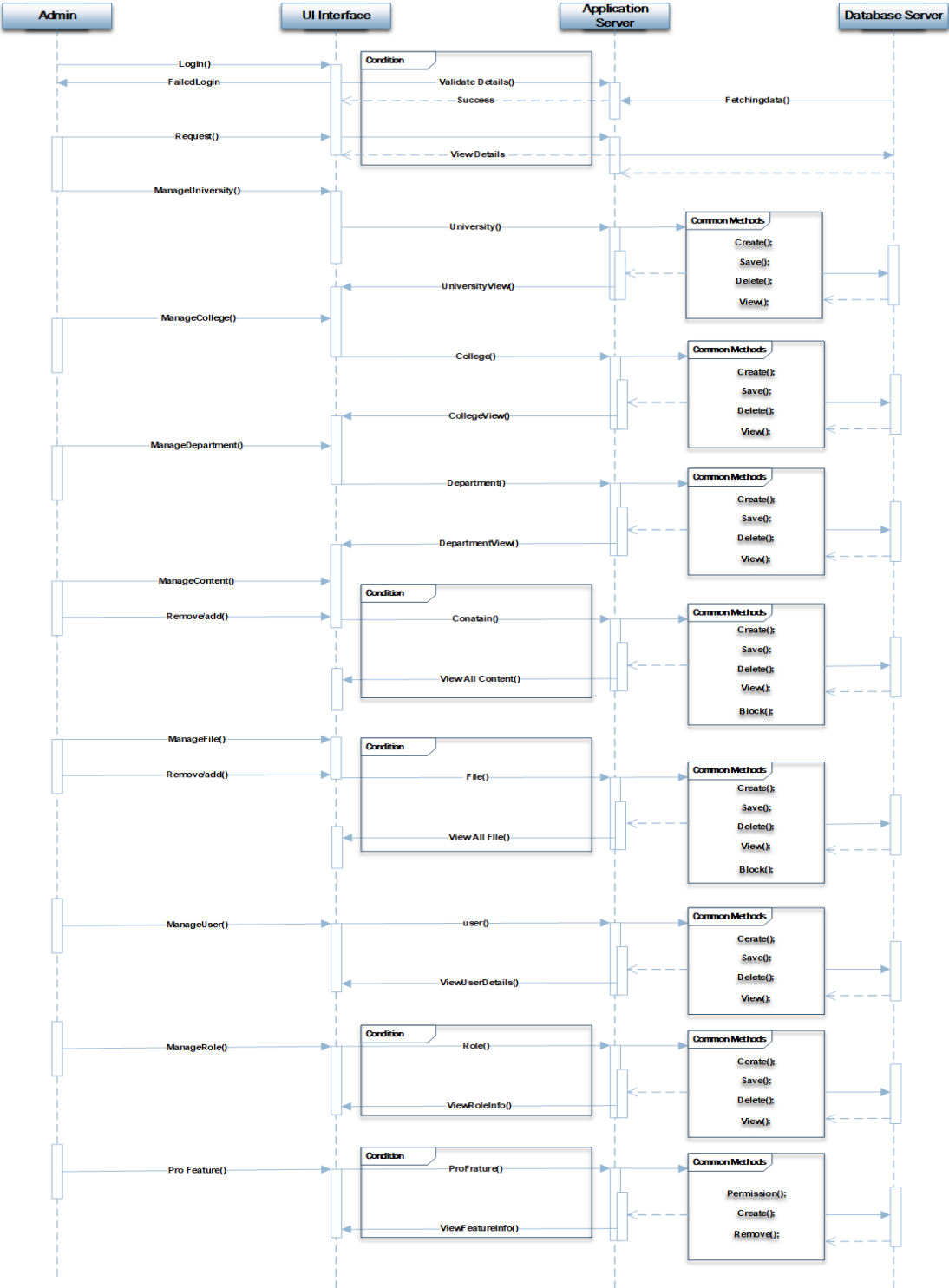


Figure 13: Sequence diagram as an admin

Description:

This diagram shows that the admin request for login to the admin portal. It fetch the data which stored on the database server. Database stored the information of the school, college and university. Admin can view the detail information of the institution that are stored on the database server. Admin can manage the university, college, and department. And he can also remove any user from the system. The files which are uploaded by the user are managed by admin and he can manage or remove any files from the database server.

9.5.2 As a moderator:

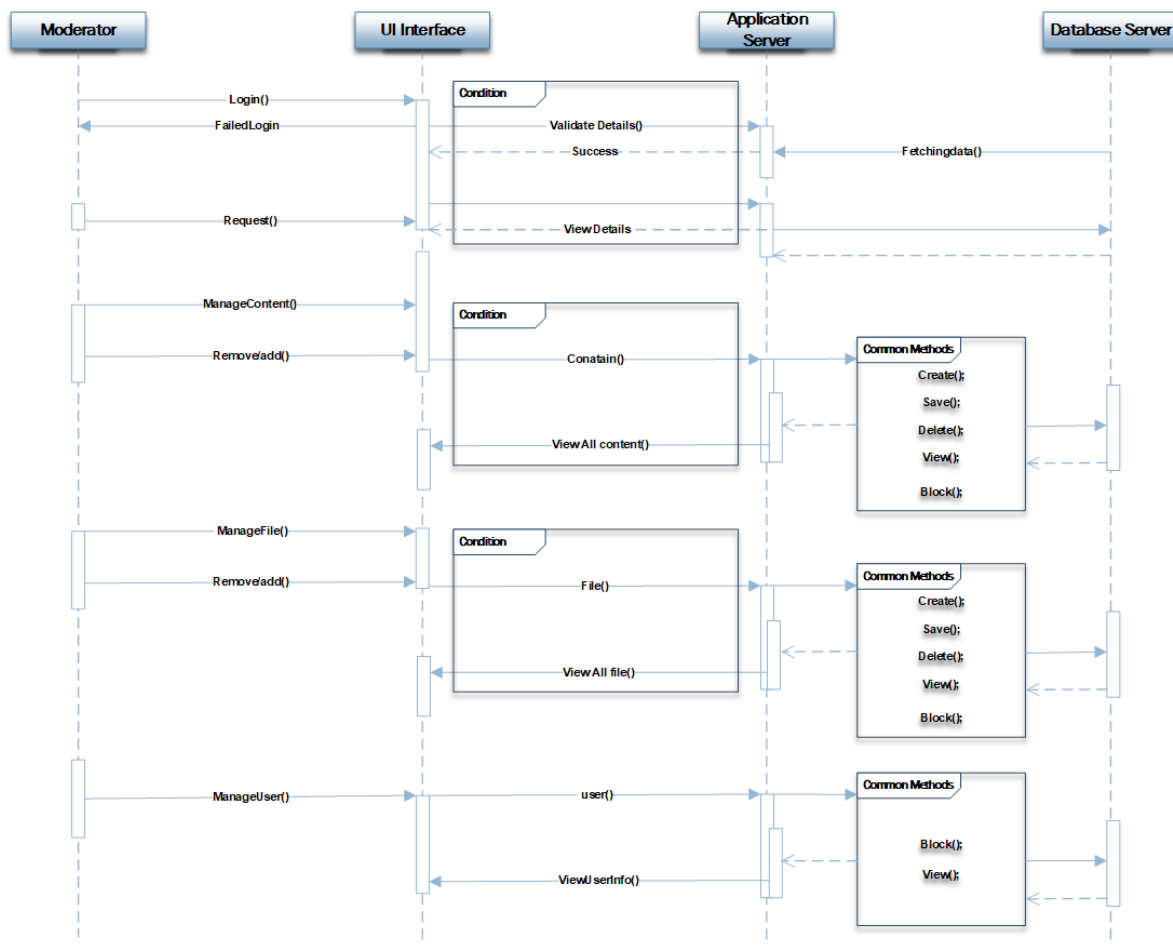


Figure 14: Sequence diagram as a moderator

Description:

Moderator request to login into the system. It fetches data from database and give them login onto the system. Moderator can manage the files, remove any files from the server and he also manage the user. He can approve any user to use the system or block them from the system if any abusive is occurred by them.

9.5.3 As a user:

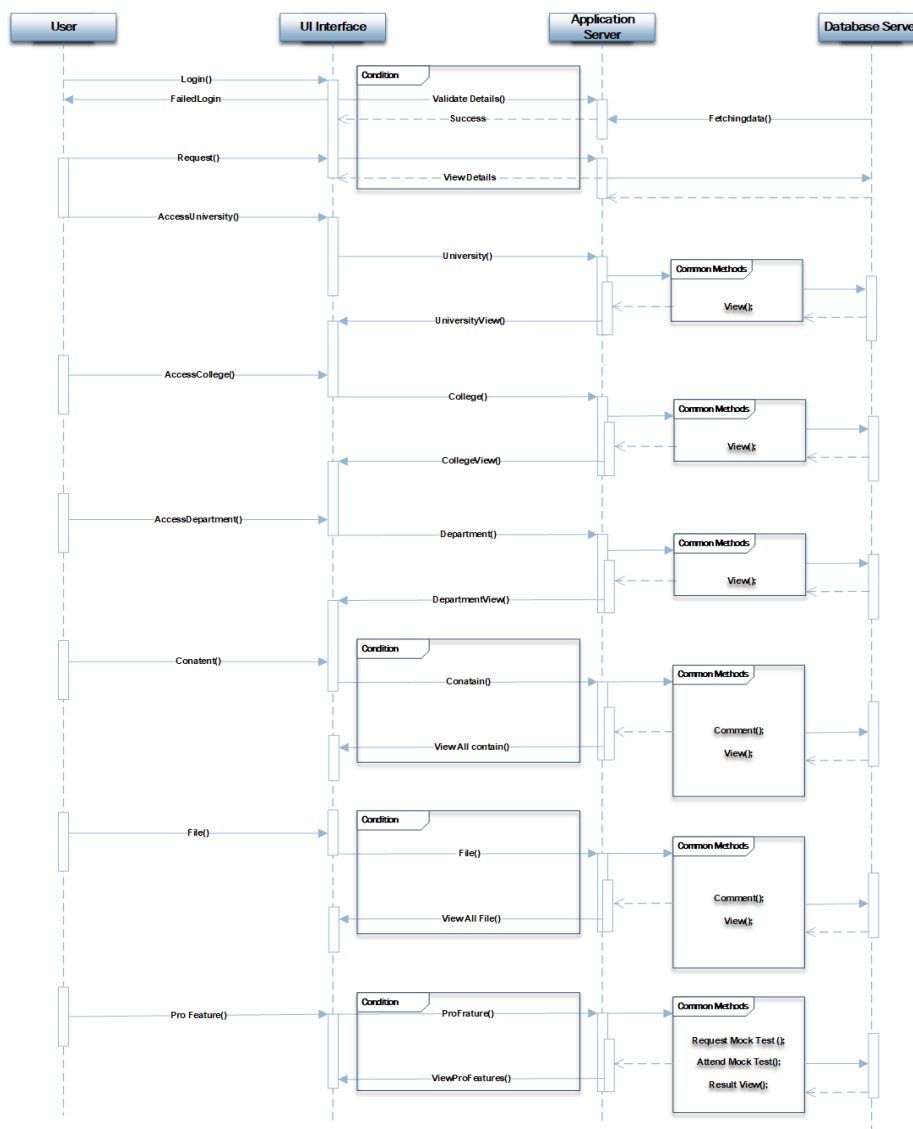


Figure 15: Sequence diagram as a user

Description:

To login into the system as a user first they have to sign up. After that, the user information will be stored on the database. Every time when user request to login it fetch the data from the database server and give them approval to login. User can view the detail information of university, school or college. They can upload any file which are approved by the moderator. User can request for any test to participate on that. All these information, question bank and answer are store on database server. After any request it fetch the data from database and show the detail information to user.

9.6 System Interface Design

The system interface is the outlook of the system. All the features which are added on the system are showing with the screenshots below,

Interface of Home screen of OAIHUB

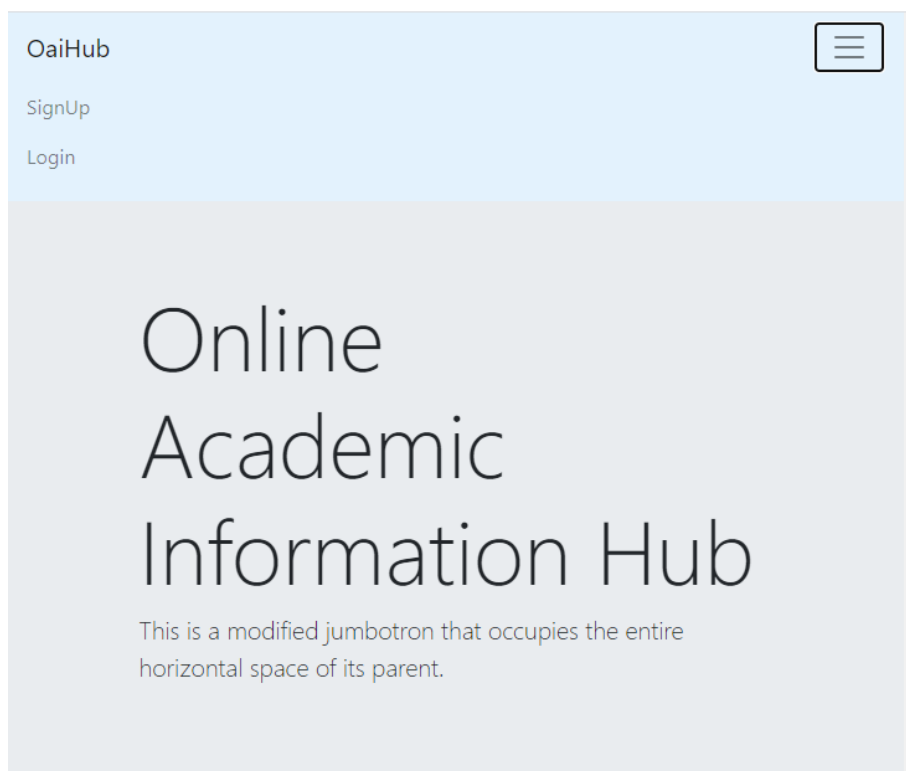


Figure 16: Home screen interface of OAIHUB

Interface of admin page

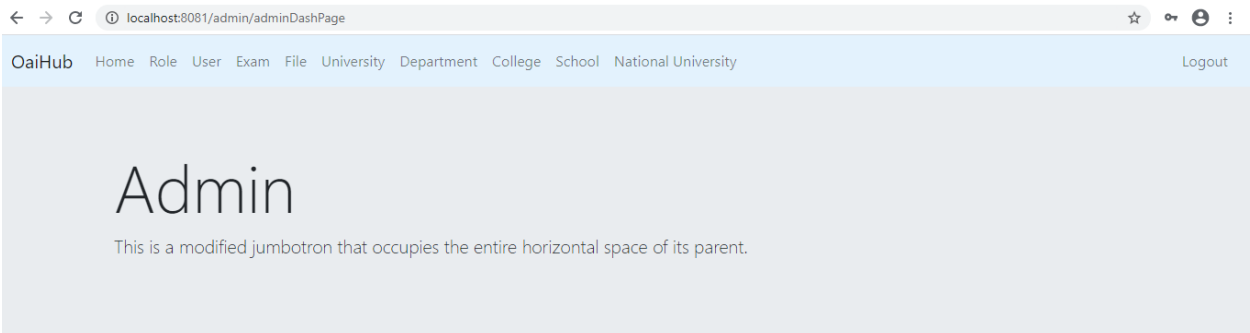


Figure 17: Admin interface

Interface of University detail information

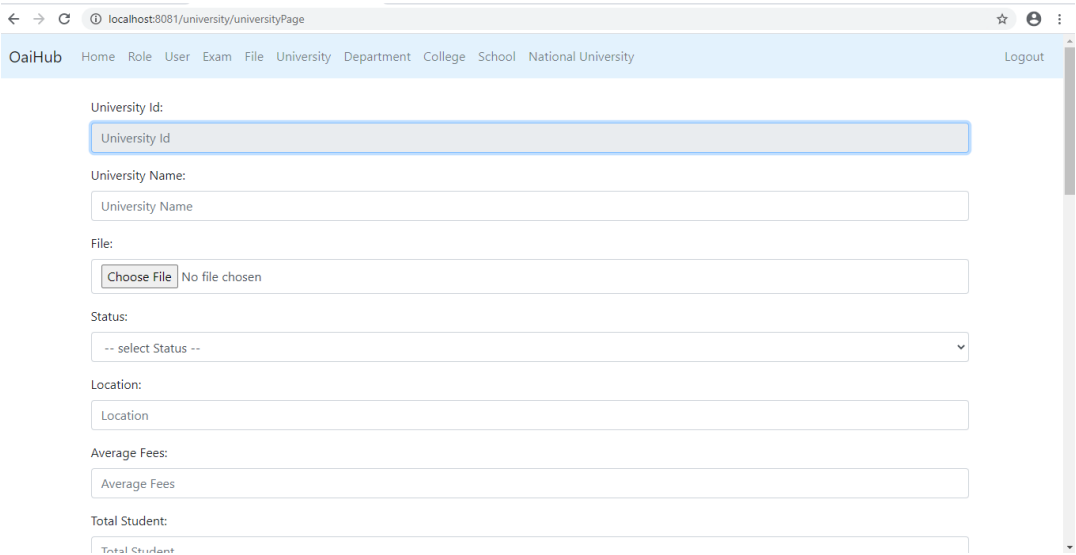


Figure 18: University detail interface

localhost:8081/university/universityPage

Employability:

Short Note:

About:

Academic Staff:

Administrative Staff:

Undergraduates:

Postgraduates:

Figure 19: University detail

localhost:8081/university/universityPage

Age:

[Save](#) [New](#)

z z z z z
 Show entries Search:

University Id	University Name	Status	Image	Location	Average Fees	Total Student	International Students	Employability	Academic Staff
3	Daffodil University	Private		Dhaka	40K-60K	17000	200	70%-75%	471
4	Dhaka University	Public		Dhaka	2K-3K	30015	1200	90%-92%	2156
22	North South University	Private		Dhaka	70K-80K	5000	500	80%-82%	500
23	Chittagong University	Public		Chitagong	2K-4K	20000	800	85%-87%	800
83	Rajshahi University	Public		Rajshahi	3K-4K	26495	200	85%-87%	1778

Showing 1 to 5 of 5 entries Previous Next

Figure 20: University detail

Interface of University Department information

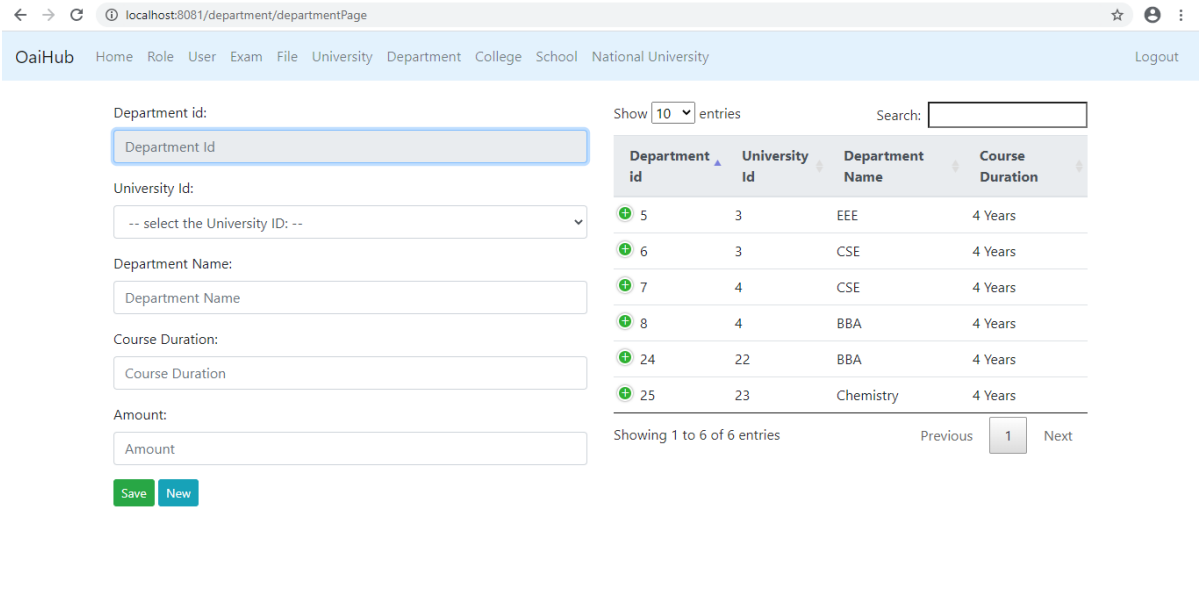


Figure 21: University department information

Interface of manage national University information

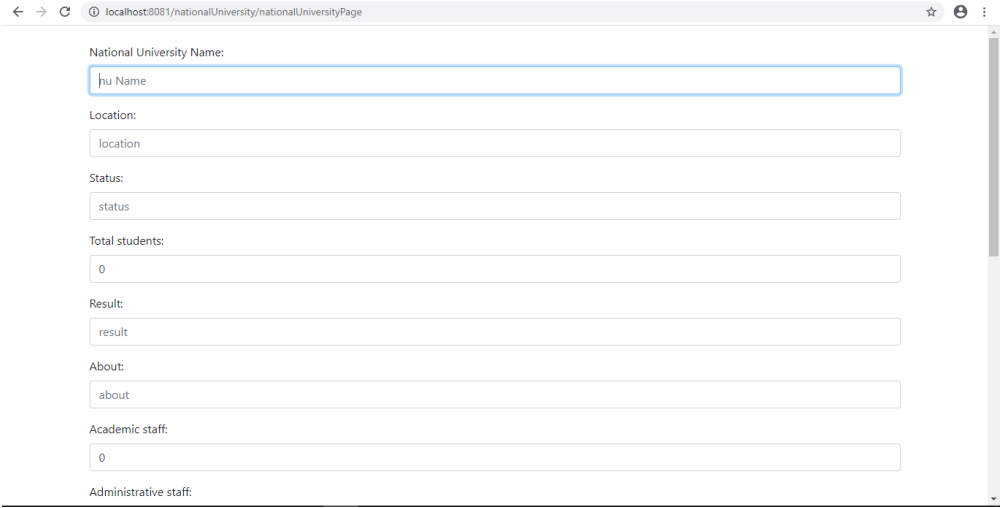


Figure 22: National university detail

localhost:8081/nationalUniversity/nationalUniversityPage

Established in:
0

Cost of group:
0

Boarding Facility:
false

Extracurricular Activities:
extraCurricularActivities

Reknowned alumni:
0

Admission Start Date:
admissionStartDate

Admission End Date:
admissionEndDate

Save New

Figure 23: Nationaluniversity detail

Interface of University view from user

localhost:8081/user/userDashUniversityPage

OaiHub Home File Upload File Download University College School National University Logout

Search...

- Daffodil University**
Dhaka
Daffodil International University is a co-educational private university located in Dhanmondi, Dhaka, Bangladesh.
View Details
- Dhaka University**
Dhaka
The University of Dhaka is the oldest university in modern Bangladesh.
View Details
- North South University**
Dhaka
North South University is the first non-government university in Bangladesh.
View Details
- Chittagong University**
Chitagong
The University of Chittagong is a public, multidisciplinary university located in Chittagong District.
- Rajshahi University**
Rajshahi
Rajshahi University is a public university which is the second largest university in Bangladesh.

Figure 24: University view from user

Interface of National University view from user

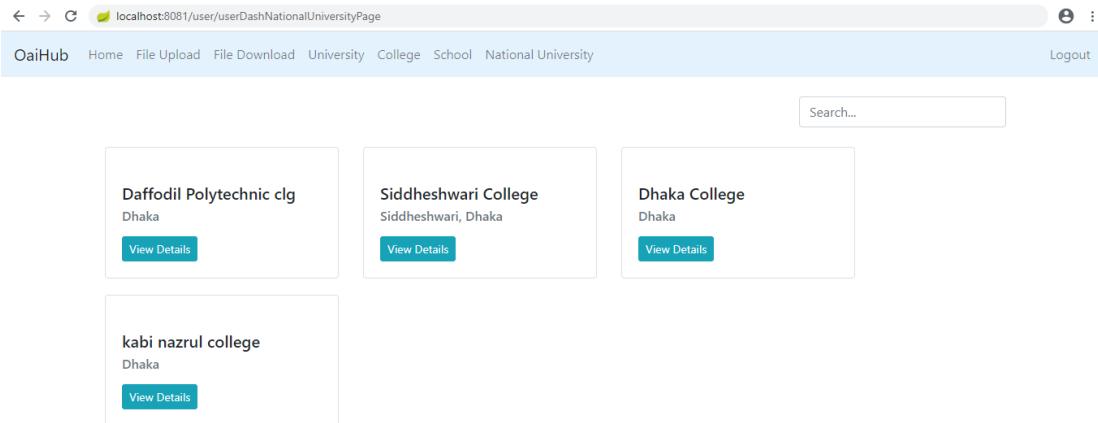


Figure 25: National University view from user

Chapter 10 – Development

10.1 Core Module Coding Samples

10.1.1 Signup and Login Page

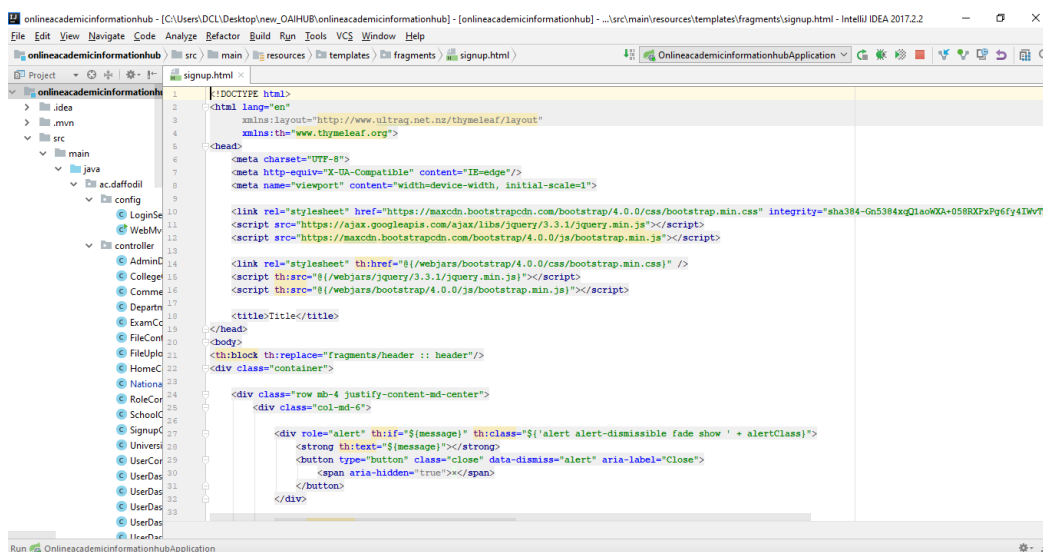
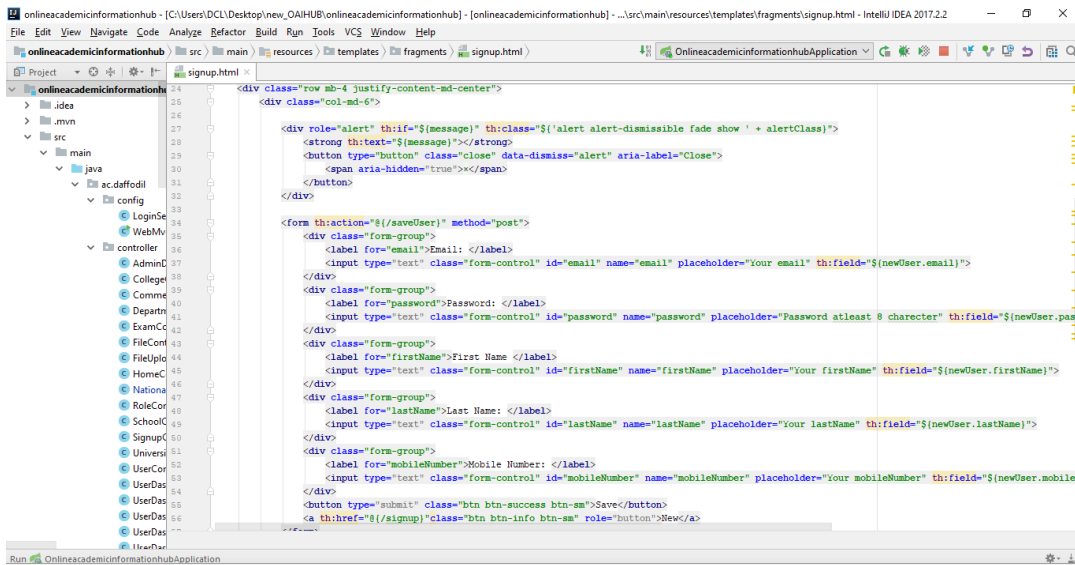


Figure 26: Code of sign up page



```
<div class="row mb-4 justify-content-md-center">
  <div class="col-md-6">
    <div role="alert" th:if="${message}" th:class="{ 'alert alert-dismissible fade show ' + alertClass}">
      <strong th:text="${message}"></strong>
      <button type="button" class="close" data-dismiss="alert" aria-label="Close">
        <span aria-hidden="true"></span>
      </button>
    </div>
    <form th:action="@{/saveUser}" method="post">
      <div class="form-group">
        <label for="email">Email: </label>
        <input type="text" class="form-control" id="email" name="email" placeholder="your email" th:field="${newUser.email}">
      </div>
      <div class="form-group">
        <label for="password">Password: </label>
        <input type="text" class="form-control" id="password" name="password" placeholder="Password atleast 8 character" th:field="${newUser.password}">
      </div>
      <div class="form-group">
        <label for="firstName">First Name </label>
        <input type="text" class="form-control" id="firstName" name="firstName" placeholder="Your firstName" th:field="${newUser.firstName}">
      </div>
      <div class="form-group">
        <label for="lastName">Last Name: </label>
        <input type="text" class="form-control" id="lastName" name="lastName" placeholder="Your lastName" th:field="${newUser.lastName}">
      </div>
      <div class="form-group">
        <label for="mobileNumber">Mobile Number: </label>
        <input type="text" class="form-control" id="mobileNumber" name="mobileNumber" placeholder="Your mobileNumber" th:field="${newUser.mobileNumber}">
      </div>
      <button type="submit" class="btn btn-success btn-sm">Save</button>
    </form>
  </div>
</div>
```

Figure 27: Code of sign up page

Output of the log in page

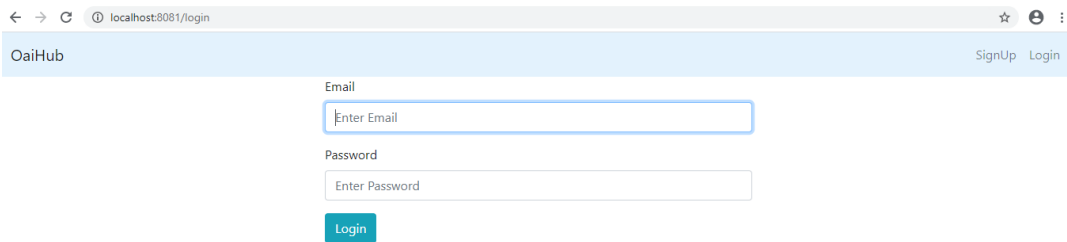


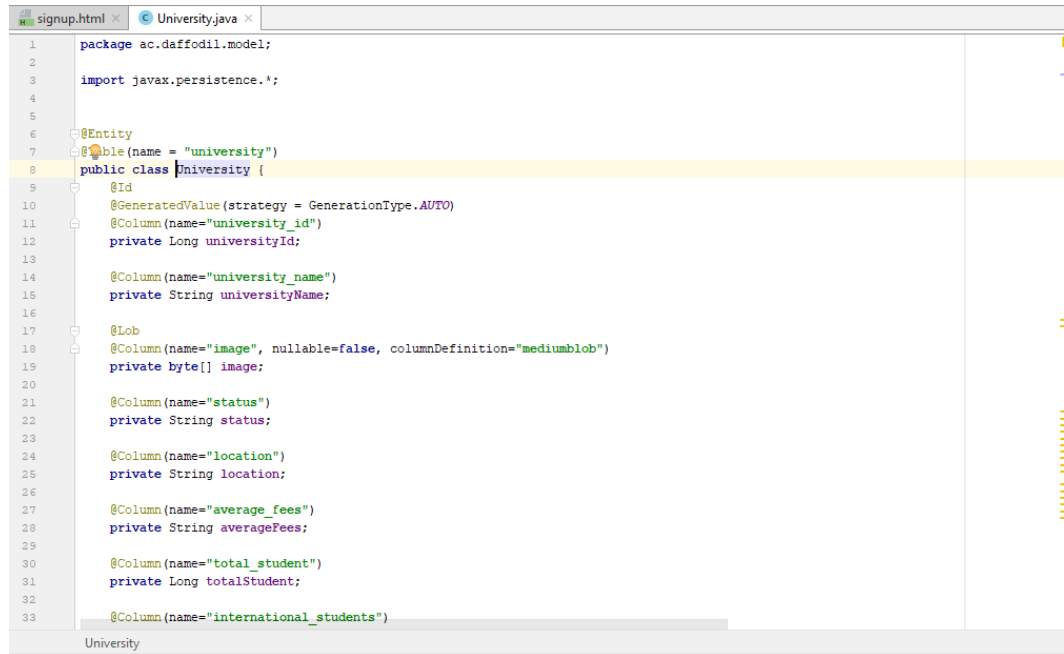
Figure 28: Output of sign up page

Purpose of using this code

This code is needed when User need to sign up and log in to this system.

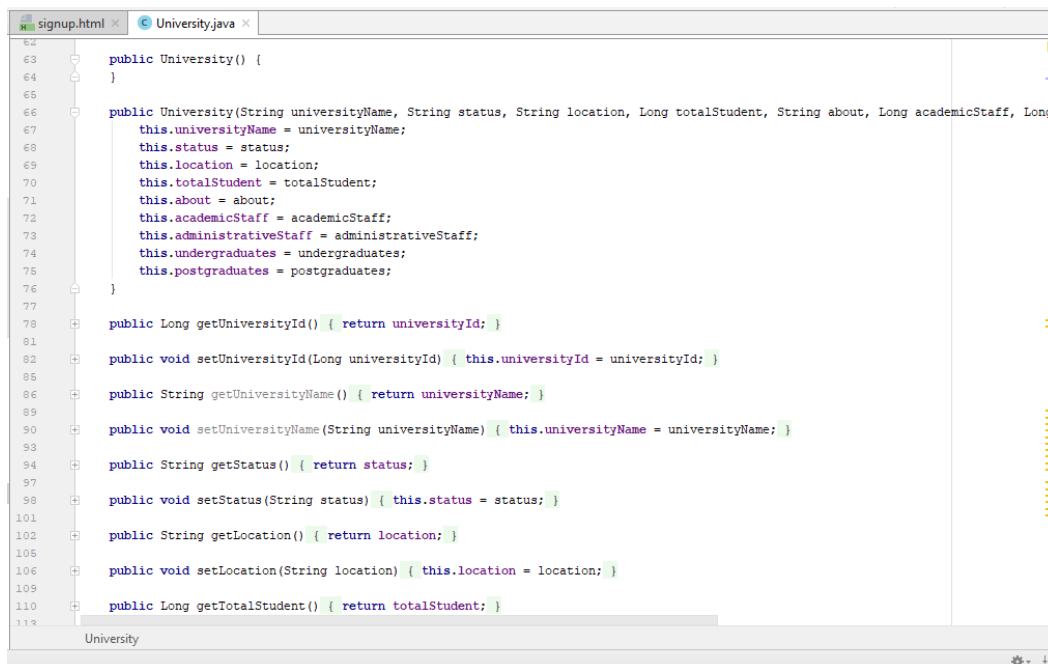
- User can sign up and log in by this code.
- They need to add their information to sign up.
- The added information is need when they has to log in.

10.1.2 Codes of university module



```
1 package ac.daffodil.model;
2
3 import javax.persistence.*;
4
5
6 @Entity
7 @Table(name = "university")
8 public class University {
9     @Id
10    @GeneratedValue(strategy = GenerationType.AUTO)
11    @Column(name="university_id")
12    private Long universityId;
13
14    @Column(name="university_name")
15    private String universityName;
16
17    @Lob
18    @Column(name="image", nullable=false, columnDefinition="mediumblob")
19    private byte[] image;
20
21    @Column(name="status")
22    private String status;
23
24    @Column(name="location")
25    private String location;
26
27    @Column(name="average_fees")
28    private String averageFees;
29
30    @Column(name="total_student")
31    private Long totalStudent;
32
33    @Column(name="international_students")
```

Figure 29: Code of university page



```
63 public University() {
64 }
65
66 public University(String universityName, String status, String location, Long totalStudent, String about, Long academicStaff, Long
67     this.universityName = universityName;
68     this.status = status;
69     this.location = location;
70     this.totalStudent = totalStudent;
71     this.about = about;
72     this.academicStaff = academicStaff;
73     this.administrativeStaff = administrativeStaff;
74     this.undergraduates = undergraduates;
75     this.postgraduates = postgraduates;
76 }
77
78 public Long getUniversityId() { return universityId; }
79
80 public void setUniversityId(Long universityId) { this.universityId = universityId; }
81
82 public String getUniversityName() { return universityName; }
83
84 public void setUniversityName(String universityName) { this.universityName = universityName; }
85
86 public String getStatus() { return status; }
87
88 public void setStatus(String status) { this.status = status; }
89
90 public String getLocation() { return location; }
91
92 public void setLocation(String location) { this.location = location; }
93
94 public Long getTotalStudent() { return totalStudent; }
```

Figure 30: Code of university page

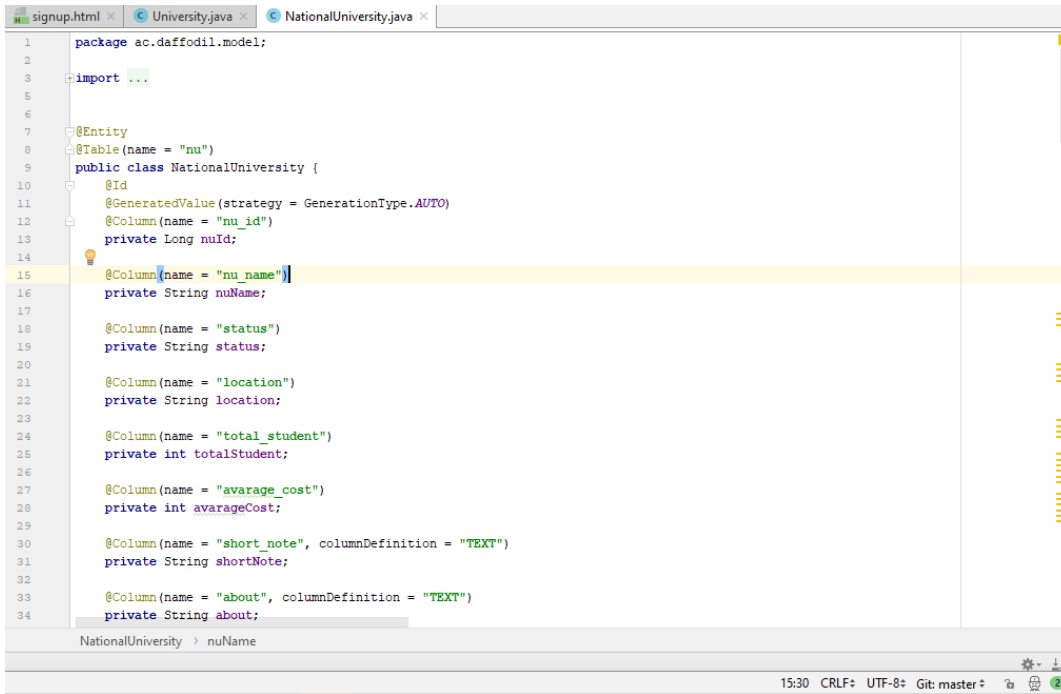
```
193
194 public void setResearch(String research) { this.research = research; }
197
198 public String getAge() { return age; }
201
202 public void setAge(String age) { this.age = age; }
205
206 public byte[] getImage() { return image; }
209
210 public void setImage(byte[] image) { this.image = image; }
213
214
215 @Override
216 public String toString() {
217     return "University{" +
218         "universityId=" + universityId +
219         ", universityName=" + universityName + '\n' +
220         ", status=" + status + '\n' +
221         ", location=" + location + '\n' +
222         ", averageFees=" + averageFees + '\n' +
223         ", employability=" + employability + '\n' +
224         ", totalStudent=" + totalStudent +
225         ", internationalStudents=" + internationalStudents +
226         ", shortNote=" + shortNote + '\n' +
227         ", about=" + about + '\n' +
228         ", academicStaff=" + academicStaff +
229         ", administrativeStaff=" + administrativeStaff +
230         ", undergraduates=" + undergraduates +
231         ", postgraduates=" + postgraduates +
232         ", research=" + research + '\n' +
233         ", age=" + age + '\n' +
234         '}';
235 }
```

Figure 31: Code of university page

Purpose of this Code

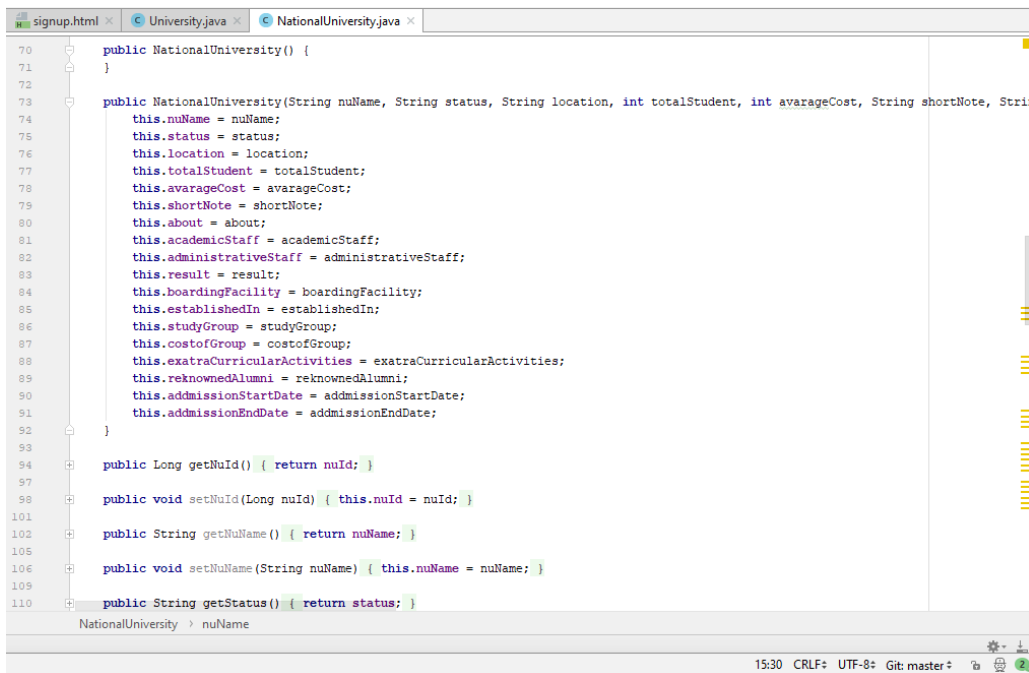
- This code will show the university details when the admin want to put the university details.
- The details of university will show on the user portal.
- Also admin can show this.

10.1.3 National University module



```
1 package ac.daffodil.model;
2
3 import ...
4
5
6
7 @Entity
8 @Table(name = "nu")
9 public class NationalUniversity {
10     @Id
11     @GeneratedValue(strategy = GenerationType.AUTO)
12     @Column(name = "nu_id")
13     private Long nuId;
14
15     @Column(name = "nu_name")
16     private String nuName;
17
18     @Column(name = "status")
19     private String status;
20
21     @Column(name = "location")
22     private String location;
23
24     @Column(name = "total_student")
25     private int totalStudent;
26
27     @Column(name = "avarage_cost")
28     private int avarageCost;
29
30     @Column(name = "short_note", columnDefinition = "TEXT")
31     private String shortNote;
32
33     @Column(name = "about", columnDefinition = "TEXT")
34     private String about;
```

Figure 32: Code of national university page



```
70 public NationalUniversity() {
71 }
72
73 public NationalUniversity(String nuName, String status, String location, int totalStudent, int avarageCost, String shortNote, Strin
74     this.nuName = nuName;
75     this.status = status;
76     this.location = location;
77     this.totalStudent = totalStudent;
78     this.avarageCost = avarageCost;
79     this.shortNote = shortNote;
80     this.about = about;
81     this.academicStaff = academicStaff;
82     this.administrativeStaff = administrativeStaff;
83     this.result = result;
84     this.boardingFacility = boardingFacility;
85     this.establishedIn = establishedIn;
86     this.studyGroup = studyGroup;
87     this.costofGroup = costofGroup;
88     this.exatraCurricularActivities = exatraCurricularActivities;
89     this.rekownedAlumni = rekownedAlumni;
90     this.admissionStartDate = admissionStartDate;
91     this.admissionEndDate = admissionEndDate;
92 }
93
94 public Long getNuId() { return nuId; }
95
96 public void setNuId(Long nuId) { this.nuId = nuId; }
97
98 public String getNuName() { return nuName; }
99
100 public void setNuName(String nuName) { this.nuName = nuName; }
101
102 public String getStatus() { return status; }
```

Figure 33: Code of national university page

```
229 public Date getAdmissionStartDate() { return admissionStartDate; }
230
231
232 public void setAdmissionStartDate(Date admissionStartDate) { this.admissionStartDate = admissionStartDate; }
233
234
235 public Date getAdmissionEndDate() { return admissionEndDate; }
236
237 public void setAdmissionEndDate(Date admissionEndDate) { this.admissionEndDate = admissionEndDate; }
238
239
240
241
242
243
244 @Override
245 public String toString() {
246     return "NationalUniversity{" +
247         "nuId=" + nuId +
248         ", nuName=" + nuName + '\n' +
249         ", status=" + status + '\n' +
250         ", location=" + location + '\n' +
251         ", totalStudent=" + totalStudent +
252         ", avarageCost=" + avarageCost +
253         ", shortNote=" + shortNote + '\n' +
254         ", about=" + about + '\n' +
255         ", academicStaff=" + academicStaff +
256         ", administrativeStaff=" + administrativeStaff +
257         ", result=" + result + '\n' +
258         ", boardingFacility=" + boardingFacility +
259         ", establishedIn=" + establishedIn +
260         ", studyGroup=" + studyGroup + '\n' +
261         ", costofGroup=" + costofGroup +
262         ", extraCurricularActivities=" + extraCurricularActivities + '\n' +
263         ", reknownedAlumni=" + reknownedAlumni +
264         ", admissionStartDate=" + admissionStartDate +
265         ", admissionEndDate=" + admissionEndDate +
266         '}';
267
268 }
269
```

Figure 34: Code of national university page

Purpose of the Code

- This code is showing on the national university portal.
- Admin will give these information and show it on the user portal.

10.2 Possible problem break down

Developing the new system I have faced many problems. To get rid of these problems I have divided these problems into small part to develop a problem free system. These are given below,

10.2.1 Designing and creating database

- Create database for OAIHUB
- Proper attributes are choosing.
- Building relationships correctly between the attributes.
- Implement database.

10.2.2 Design the front end

- According to the system select the keywords.
- Designing the system's pages.
- Making the navigations.

10.2.3 Login of the system

- According to the system log in page is designed.
- Designing the interface.
- Testing is also needed here.

10.2.4 Develop the back end

- All types of technology that are need in this system are implement.
- Relate all the front end design with the back end.
- After this relating with the database.
- Include the testing.

10.2.5 Admin and Moderator management

- Give them permission to add users.
- Admin will manage the users.
- Admin also can block the users.
- View the activities of the users.

Chapter 11 – Testing

11. 1 Test Case

The test cases of this project are given below,

11.1.1 Test case for unit test 1

Test Case	Unit test 1
-----------	-------------

no.			
Test class	Management of Users		
Test Description	User input validation in the sign up and log in form.		
Data source	Test Steps	Expected result	Actual result
Admin entry	Add user details that are given by the users: dity786	A message will show that “the user name is invalid”	Failed

Test case for unit test 2

Test case no.	Unit test 2		
Test class	University detail information		
Test description	Validation of university detail information.		
Data source	Test steps	Expected result	Actual result
Admin entry	Add valid data on the correct data type, Date is like that: 12February 20	A message will show the incorrect data.	

11.2 Unit Testing

Unit Test 1

Unit Test: 1		Test Class: User Login Window	Designed By:	
Data Source: User input		Objective: Password checking test.	Tester: Ruvina Parvin Dity	
Test Case	Description	Tasks	Expected Result	Actual Result
1.1	Test for checking wrong password.	Enter login Info, User Email: Password:	Show message “Invalid username or Password”	Perfect

The test result screenshot for Unit Test 1 is given below,

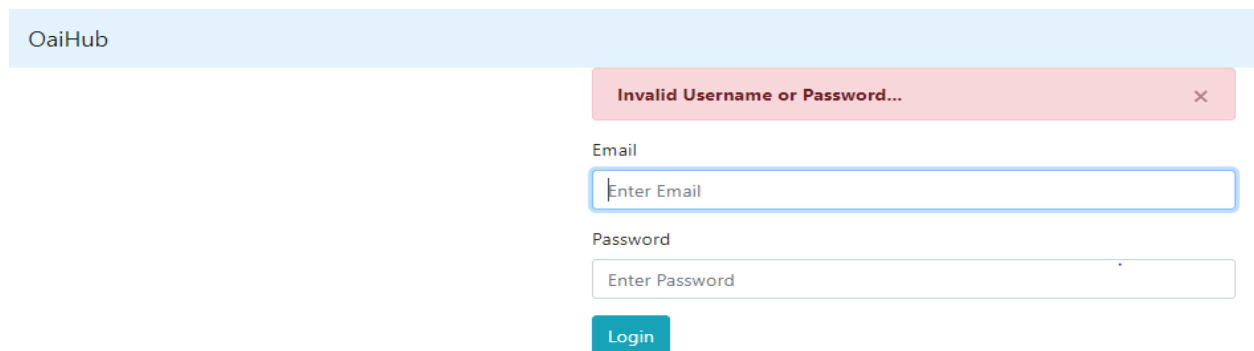
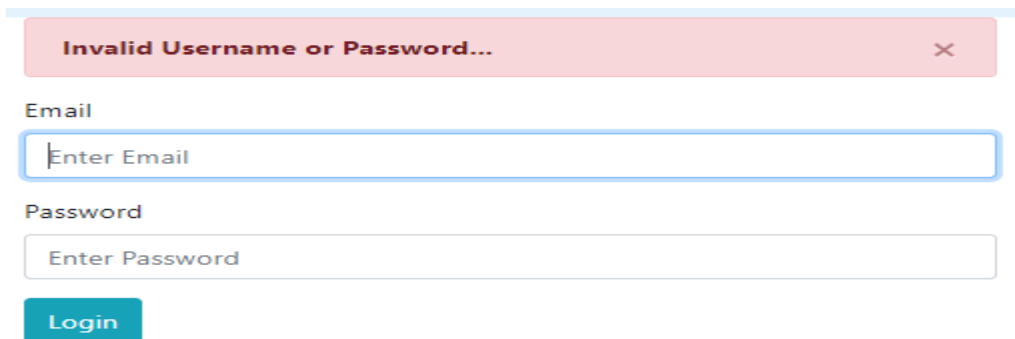


Figure 35: Showing wrong input message

Unit Test 2

Unit Test: 2		Test Class: Admin Login Window	Designed By:	
Data Source: Admin input		Objective: Password checking test.	Tester: Ruvina Parvin Dity	
Test Case	Description	Tasks	Expected Result	Actual Result
1.1	Test for checking wrong password.	Enter login Info, Admin Email: Password:	Show message “Invalid username or Password”	Perfect

The test result screenshot for Unit Test 2 is given below,



The screenshot shows a login interface with a red error message at the top: "Invalid Username or Password...". Below the message are two input fields: "Email" with the placeholder text "Enter Email" and "Password" with the placeholder text "Enter Password". A blue "Login" button is positioned below the password field.

Figure 36: Showing wrong message if any field is blank

Unit Test 3

Unit Test: 3		Test Class: File	Designed By:	
Data Source: File upload		Objective: Required field can't empty.	Tester: Ruvina Parvin Dity	
Test Case	Description	Tasks	Expected Result	Actual Result
1.2	Test for Required field has been able to upload any file.	Enter file Info: Exam ID: select one File Type: select any File Name: Choose file Description:	Show message "Fail"	Perfect

The test result screenshot for Unit Test 3 is given below,

FAIL! ×

Exam Id:

File Type:

File:
 No file chosen

Subject Name:

Year:

Figure 37: Showing wrong input message

Chapter 12 – Implementation

Implementation is the final stage of a system. When all the stages are completed the implementation takes place here. The implementation chapter contains some topics.

These are given below with the details

12.1 Training

Training is needed to know uses of the system. Because it is a way to introduce with this new system. With this training users can be familiar with this system. The training plan is given below,

Training Title	Description
Access to the system	Admin or moderator or end user can know how to access the system.
Maintenance of information	Users can get the idea of maintaining their own information on this system. User will be benefitted by know how to edit their personal information on this application. Admin can know how to edit, delete the information if needed.
Report generation	Users can get to know how to generate the reports among this system. Generally admin can generate the reports of the daily activity of the users.

12.2 Big Bang

Big bang implementation scheme is that type of implementation which work by removing the existing system. It apply the whole system at a time. It is the quickest implementation scheme which allow that after finish all the testing it directly goes on the implementation. But it is a little bit risky. Because it can be crush anytime and lost their data.

Chapter 13 – Critical Appraisal and Evaluation

The critical appraisal is the section that evaluate the whole developed project quality according to the objectives and goals. In this part the success of this project and the failure is discussed.

13.1 Objectives that could be done

13.1.1 User can get to know the academic information

The OAIHUB is the first application in our country where all types of academy or institutional information are included. There is no other application like this where users can get all the necessary information about an institution.

- **Success rate:** The success rate of this system is quite satisfactory. All types of institute like university, national university, public or private university all are included in this application with their actual information. User can search all the information on this system.
- **How much better it could be done**
There is no other application like this which provide the actual information like this. So it has to be very much user friendly. Users need to register for using this system. Without register general user can't add files or share anything else. They can't see these files as well. So this could make the system better.

➤ **How better is the features of the solution**

The features of this system are unique. There is log in, registration, sign up, file upload, file download, university, national university, school, college. These are added on this system.

➤ **Which features could not be touched**

There is a professional training feature in this project that I cannot touch. This will work on the further development.

➤ **Why this features could not be touched**

The professional training feature could not be touched because of the limited time.

13.1.2 Producing the academic information hub

This project is act like a common academic information hub. All the educational institutes are added here with their necessary information. So this will helps all types of user by giving them the information.

➤ **Success Rate**

The success of this OAIHUB project is lie on its title. Because this means that online academic information hub. So this will help the users by giving them the right information over the internet.

➤ **How much better it could be done**

The application is developed for all types of students, teachers and parents as well. It is like all types ages people can use this system. So that this application has to be made user friendly. The application is very easy to use.

➤ **Why those features could not be done**

In this project some features are not added yet. Like exam portal which are not developed properly. This are added on the further development.

13. 1.3 Prepare a communication platform

In this application there is a communication platform where students can communicate with themselves.

➤ **Success rate**

This communication platform is created for the users who are connected on this application. They can regularly update their necessary information and getting feedback on that. So this will be very helpful for the users.

➤ **How much better it could be done**

In this application the users can be benefitted. Because this makes them helpful by communicate.

➤ **Which features could not be done**

Admin and the moderation need to communicate with the users. But this features cannot doing now. So this will send on the next development.

13.1.4 Set the methodology for developing the system

The new system development will follow a proper methodology. The business methodology is not perfectly matched with it because it's an academic educational project. I have followed the DSDM methodology for developing the project.

➤ **Success rate**

By following the methodology this project is completed with the given time box. All the steps from analysis to implementation all are done by this methodology.

➤ **How much better it could be done**

The project is completed but it should be better if the time is little longer. It will be helpful for us. Our team work will be stronger. It can reduce our pressure.

➤ **Which features could not be touched**

Our project is handle by our supervisor. Without his permission we cannot add any features or anything else in this application. So we cannot develop this project with our own choice.

13.1.5 Produce a well documentation

Documentation is must be needed for a project to understand what is done with this application.

➤ **Success rate**

The project documentation carries all the diagrams, charts, tables. It also includes the analysis from literature review, journals, articles, books etc. It makes easier to understand the whole documentation to the users.

➤ **How much better it could be done**

Documentation part is described all the thing that happened in this project. But this cannot be very easy to understand for all. Literature or books reviews are not right all the time. So more diagrams will be better for users.

➤ **Which features could not be done**

This is an academic educational information hub. Some software cannot open it for diagram making. These are added on this document so that they can open it.

13.2 Objectives that could not met

The objectives that could not be met are discussed in the previous sections. In this part, identifying the problem and the reason behind this problem are described.

➤ **Creating a system log**

System log is the features which providing the guideline to the user about the way of using the system such as, accessing the system, using other options etc. User can learning at a time they can doing. It is very helpful for users.

Why it could not met

For the lack of proper planning it cannot done.

What could have been done

Doing a proper planning and effective time boxing can make the system log. If it is possible than the users can easily use the system.

Chapter 14 – Conclusion

14.1 Summary of the project

The system is developed for the students as well as teachers and parents. In our country there is no system that can give the actual information about the educational institution. So this is the first in our country that work for the students and their parents.

In this project, the admin, moderator, user and visitor or general user are the main user of this system. User have sign up first and then log in to the system. Then the user can see and use the options properly. They can see all the uploaded files and can download all of them if needed. There is university, national university, school, college etc. All kinds of educational institution are added in this system that will help the users by giving then the necessary information over the online. Some books, test papers, question bank are also uploaded here. Users can participate on the exam from this system that are given by the admin.

In this project there is 14 chapters. All the chapters are documented well. Each of the chapter is finished with the aims and objectives of the projects. The core system and its objectives are developed with the better usability. The project is done using the Java, spring boot, MySQL and such kind of programming technologies. Testing also done after the development. The chapters are include all these information with discussions.

14. 2 Goal of the project

The main goal of this project is to remove problems of students for the admission in an institution. To know the actual information they had to go to the targeted institute. So they have to facing many problems. The main goals are given below,

- Reduce the problem of going to the institute for making the admission.

- Make a usable platform by giving the actual information and update it severally.
- Making a communication platform which relate to the educational learning.
- Provide an easiest way for the students without any hassle.
- Develop a sustainable platform for the students, teachers as well as parents.

14.3 Success of the project

The aims and objectives are fulfilled according to the planning of the project. Users can see all the updated information which are added to this system. They can see the uploaded files, books, papers, question bank etc. And download them in their needed. The main objectives and goals can be encountered as a great success. This is first application which include all the necessary information about the institution of our country. That will help our students. They don't need to go to the university or else. They can get all these information sitting on their home. So the main goals and objectives are done in this project. It is a great success of this project.

14.4 Value of the project

The main value of the project can realize by the users when they start to use it. This project is generally based on giving the necessary educational information to the users. This project can achieve the main goals if it release successfully. When the students and their parents can get all the information sitting on their home they can know the actual value of this system. But we can see that this can able to remove many problems of the users.

14.5 My experience

Developing the new system I had to gather all the information and requirements. It was really a great experience for me to be a part of develop the system. The project is very usable for the students in the time of their admission. This project development make me so much responsible for doing this task on the due time. The time of the project is very limited so it need to finish early. This also help me to realize the responsible about

the time. This also give me to learn to handle problems on the critical situations and overcome the problems. The experience on developing the project will help me in the future in my professional work.

References

Anon., 2003. *UKEssays*. [Online]

Available at: <https://www.ukessays.com/essays/information-systems/dynamic-systems-development-methodology.php>

[Accessed 2020].

Anon., 2011, Aug 20. *Wiki dot*. [Online]

Available at: <http://dsdmofagilemethodology.wikidot.com/>

[Accessed 2020].

Anon., 2012. *Client server application*. [Online]

Available at: <https://www.sciencedirect.com/topics/computer-science/client-server-application>

[Accessed 2020].

Anon., 2018 april. *QS Top university*. [Online]

Available at: <https://www.topuniversities.com/blog/33-useful-websites-students>

[Accessed 2020].

Anon., 2020. *tech target*. [Online]

Available at: <https://searchsoftwarequality.techtarget.com/definition/Web-application-Web-app>

[Accessed 2020].

Anon., dec 14, 2017. *Kate eby*. [Online]

Available at: <https://www.smartsheet.com/implementation-plan>

[Accessed 12 march 2020].

Anon., n.d. *ePravesh*. [Online]

Available at: <https://www.blog.epravesh.com/top-4-challenges-manage-online->

admission-process/

[Accessed 17 june 2020].

Anon., n.d. *Greeks for greek*. [Online]

Available at: <https://www.geeksforgeeks.org/dynamic-systems-development-method-dsdm/>

Anon., n.d. *Ocean guardian school*. [Online]

Available at: https://nmssanctuaries.blob.core.windows.net/sanctuaries-prod/media/archive/education/ocean_guardian/og_guidelines14.pdf

[Accessed 2020].

Anon., n.d. *Press Books*. [Online]

Available at: <https://cao-94612.s3.amazonaws.com/documents/oak035553.pdf>

[Accessed 21 february 2020].

Anon., n.d. *University applicatons*. [Online]

Available at: <https://www.topuniversities.com/student-info/admissions-advice/university-applications-admissions-expert-advice>

[Accessed 2020].

Au, P. m. b., n.d. *Project management basics*. [Online]

Available at: <https://pmbasics101.com/project-scope/>

[Accessed 2015-2020].

Wertheim, A.-R., n.d. *Anne-Ruth Wertheim*. [Online]

Available at: <https://anne-ruthwertheim.com/english/principles-characteristics-and-objectives-of-project-education/>

[Accessed 2020].

Appendices

User Guide

To use this system at first user need to sign up in this system. To sign up user had to put their information on the screen. Then the user can log in to the system by click on the log in button. The admin and manager also need to sign up and log into the system. After login to the system the user can see the home screen. The admin can see their admin portal. Admin can add or delete university details and edit the user information. The user can see all the details of their needed institute. There is other options such as, files, exam, role etc. The exam is offered by the admin and user can participate on the exam portal. Files are uploaded by admin or users both. All can see these files and can download. In this user can communicate between themselves.

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