

PROJECT DOCUMENTATION

Project	ONLINE EXAM AND LEARNING SYSTEM
Title	



Name: Mohaimenul Islam

ID: 191-16-429

Supervisor Name: Mr. Md. Minhaj Hosen

Summer 2020

Dept. Of Computing and Information System CIS

Daffodil International University

APPROVAL

This Project titled “...**ONLINE EXAM AND LEARNING SYSTEM.**”, Submitted by ...**MOHAIMENUL ISLAM...**, ID No: **191-16-429** 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 19-072020.

BOARD OF EXAMINERS



Mr. Md Sarwar Hossain Mollah

Chairman

Assistant Professor and Head

Department of Computing & Information Systems

Faculty of Science & Information Technology

Daffodil International University



Ms. Nayeema Rahman

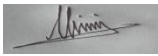
Internal Examiner

Sr. Lecturer

Department of Computing & Information Systems

Faculty of Science & Information Technology

Daffodil International University



Mr. Minhaj Hosen

Internal Examiner

Lecturer

Department of Computing & Information Systems

Faculty of Science & Information Technology

Daffodil International University



Dr. Saifuddin Md. Tareeq

External Examiner

Professor

Department of Computer Science and Engineering

Dhaka University, Dhaka

DECLARATION

I hereby declare that; this system has been done by myself and my project supervisor was **Md. Minhaj Hosen** Lecturer of CIS department of Daffodil International University. I can ensure and declare that the project or nor any part of my project had not submitted and will not be summited anywhere else for getting award of any university, diploma, or any other qualifications.

Supervised by:

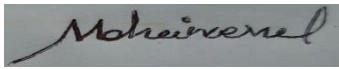


Mr. Minhaj Hosen**Internal Examiner****Lecturer**

Department of Computing & Information Systems

Faculty of Science & Information Technology

Daffodil International University

Summited by:

Mohaimenul Islam

ID: 191-16-429

Department of Computing and Information System

Daffodil International University

Acknowledgement

I do analysis, research and study to build the project. With my hard work and approach I successfully complete the system. I would like to all my honorable teachers particularly **Mr. Md. Minhaj Hosen** who is my project supervisor as they assist me during whole period of my system development with their valuable knowledge, suggestions and experience. I would also like to thanks some of my classmates and senior mates as they helped me with valuable ideas and experience. However, with the help of internet, friends and teachers and with my own knowledge I can successfully complete my project.

Dedication

I want to dedicate my whole approach and work to my parents and my teachers.

Executive Summary

This is a documentation based on final year project phase-2 of CIS department of daffodil International University. The name of the project is Online Exam and learning System which is basically a free educational website. The goal of the website is help genuine learners particularly local students and job seekers. From that website users can learn online, will be able to take part in online exam, and can search job online for free. The website is simple to use because user just need simple registration to use it.

Table of Contents:

.1Chapter 1 – Introduction:.....	1
.2Chapter 2 – Initial Study:.....	1
2.1OverviewoftheProject:.....	1
2.2 Defined Goals/Objectives of the Project:.....	2
2.2.1 Goals of the Project:.....	2
2. 2.2Objectives of the Project:.....	2
2.3Background of the project:.....	2
2.3 Problem Area:.....	3
2.4 Possible Solution:.....	3
3. Chapter 3 – Literature Review:.....	3
3.1 Discussion on problem domain based on published articles:.....	3

3.2 Discussion on problem solutions based on published articles:.....	8
3.3 Comparison of three/four leading solutions:.....	8
3.4 Recommended approach:.....	8
4. Chapter 4 – Methodology.....	9
4.1 What to use:.....	9
4.2 Why to use:.....	10
4.3 Sections of methodology:.....	10
5. Chapter 5 – Planning.....	12
5.1-Project plan.....	12
5.2.2Requiretesting.....	16
6. Chapter 6 – Feasibility.....	17
6.1 Economic Feasibility.....	17
6.2 Technical Feasibility.....	19
6.3 Operational Feasibility:.....	19
6.4 Cost Benefit Analysis.....	20
6.5 Benefit of the project:.....	21
6.6 DSDM – good or not for this project.....	21
Chapter 7 – Foundation.....	22
7.1 Overall Requirement List.....	22
7.2 What Technology to be implemented (Client/Web/Standalone):.....	23
7.3 Recommendations and Justifications.....	24
Chapter 8 – Exploration.....	24
8.1 Prioritized Requirement List (PRL).....	24
Chapter 9 – Engineering.....	25
9.1 New System Modules.....	25
9.2 Use Case.....	26

9.3 Class Diagram	27
9.4 System Interface Design / Prototype	29
Chapter10 – Deployment / Development.....	31
10.1 Possible problem break down.....	31
Chapter 11 – Testing.....	32
11.1Test Case.....	32
Chapter12- Implementation.....	45
12.1 Training.....	45
12.2 Big Bang/ Direct installation approach:.....	47
Chapter 13 – Critical Appraisal and Evaluation.....	47
13.1 Objective that could be met.....	47
Chapter 15 – Conclusion.....	50
15.1 Summary of the project.....	50
15.2 Goal of the project.....	50
15.3 My experience.....	50
Appendices	51

Table of Figures / List of Figures

Chapter 1 – Introduction

The project is a web application which focus on internet-based learning. The motto of the system is learning quality education for free. I have followed SDLC and waterfall model which contains Analysis, Design, Implementation, Testing, Deployment, and Maintenance to develop my system. I have analyzed many existing websites which are similar to my system and have tried to implement better interface and system then existing. I used programming languages such as php, html, css, JavaScript, and MySQL database for my system development and also use xampp as server.

Chapter 2 – Initial Study

2.1.1 Overview of the Project

We are living in the era of information technology. All the necessary parts of human life are influenced by internet now a days. Education sector is mostly influenced sector by the internet. Bangladesh is a developing country and its education sector in developing gradually and using of internet in education is also increasing in Bangladesh.

I realized that many of students of our country can take admission in appropriate institution and do not able to learn from qualified teachers. For that reason, I decided to develop a system which will help students all over the counter to get free education. My system helps to learn through video, pdf file, live classes etc. Users also can search for job through my system.

2.1.2 Defined Goals/Objectives of the Project:

Goals of the Project:

- Develop a system with proper efficiency and usability.
- Provide easy, effective, accurate content and support that will help learners to learn their desire things.
- Build a platform for both teachers and students.
- Achieve a reputation and quality as foreign users use the system to learn.
- Help students specially students of low-income family as they can learn for free and easily.

Objectives of the Project:

- Develop a system with appropriate resources and content of education which will definitely useful for students.
- Build an efficient and user-friendly website as user can get their necessary things easily.
- Build a system which are trustworthy and secure.
- Build the system with proper technologies as it can handle huge traffic together.
- Update content regularly according to user need.

2.2 Background of the project

Now almost 120 million of people in Bangladesh use internet and majority users are young people. Almost 70% students use internet now a days in Bangladesh. Students are taking help from internet for their education. I see that the availability of quality educational website is insufficient in Bangladesh and few websites charge money to use. I realized that if I can build an educational website for free to use and it can provide quality content for user. From my system users can learn variety of things such English, mathematics, Bengali, programming, creative design, general knowledge. The system will help both running students and students who are taking job preparation.

2.3 Problem Area

There is nothing exist without limitation in technology world. The first problem is good quality websites which focus on local education are unavailable in Bangladesh and existing are not quality. Few problems are they cannot handle big traffic together, unavailability of quality resource, unavailability of tutorial from expert, unavailability of proper exam assessment, merging job searching facility in same website, lacking of user-friendliness.

2.4 Possible Solution

To find the possible solution I analyzed all those problems and do research on to find proper solution. To handle huge traffic a system should use proper domain and hosting with necessary storage capability. We will contract with expert with specific subjects for tutorial content as user get effective content. We will use technology as user can get immediate result after finishing exam. User can participate in both written and mcq types exam. Our system also provide job searching facility for user for their desired job as all.

Chapter 3 – Literature Review

3.1 Discussion on problem domain based on published articles.

From the beginning of the using internet in Bangladesh, the use in education sector has rapidly increased. In spite of great concern and effort in developing time, our system has few limitations also. First of all, its faces problem when huge traffic uses it the same time. Another problem is it takes much time to load as it has huge data. As our team members is currently limited, we face problem to immediate response when the face some problem. We facing problem to find expert teachers for video tutorial and live class as we need thousands of teachers and we need time for it. Another big problem is ensuring security and loyalty when users apply for job and search for job as we try to marge other site with our site for job searching facility. Sometimes those sites are unsecure. However

sometimes it takes much time when try to show immediate exam result. I have point out some problems below –

- Handling huge traffic.
- Easy data loading.
- Sometimes users face problem to use it as it has many functionalities.
- Live chat facility is not implemented.
- Cannot give the guaranty of ensuring security when use or merge with other website or links of another website.

3.2 Discussion on problem solutions based on published articles.

Although internet user is increasing day by but most of them are new and inexperienced to use the properly. As a result, they face problem when using internet. Bangladesh government are taking few steps to solve those problem. As Bangladesh has huge opportunity many private companies are also investing in here. I find many limitations when we talk about internet-based education in Bangladesh. If Bangladesh can take the advantage of using internet in education, it can give many more especially to youth who are million in numbers in Bangladesh. Below I discussed some possible solution

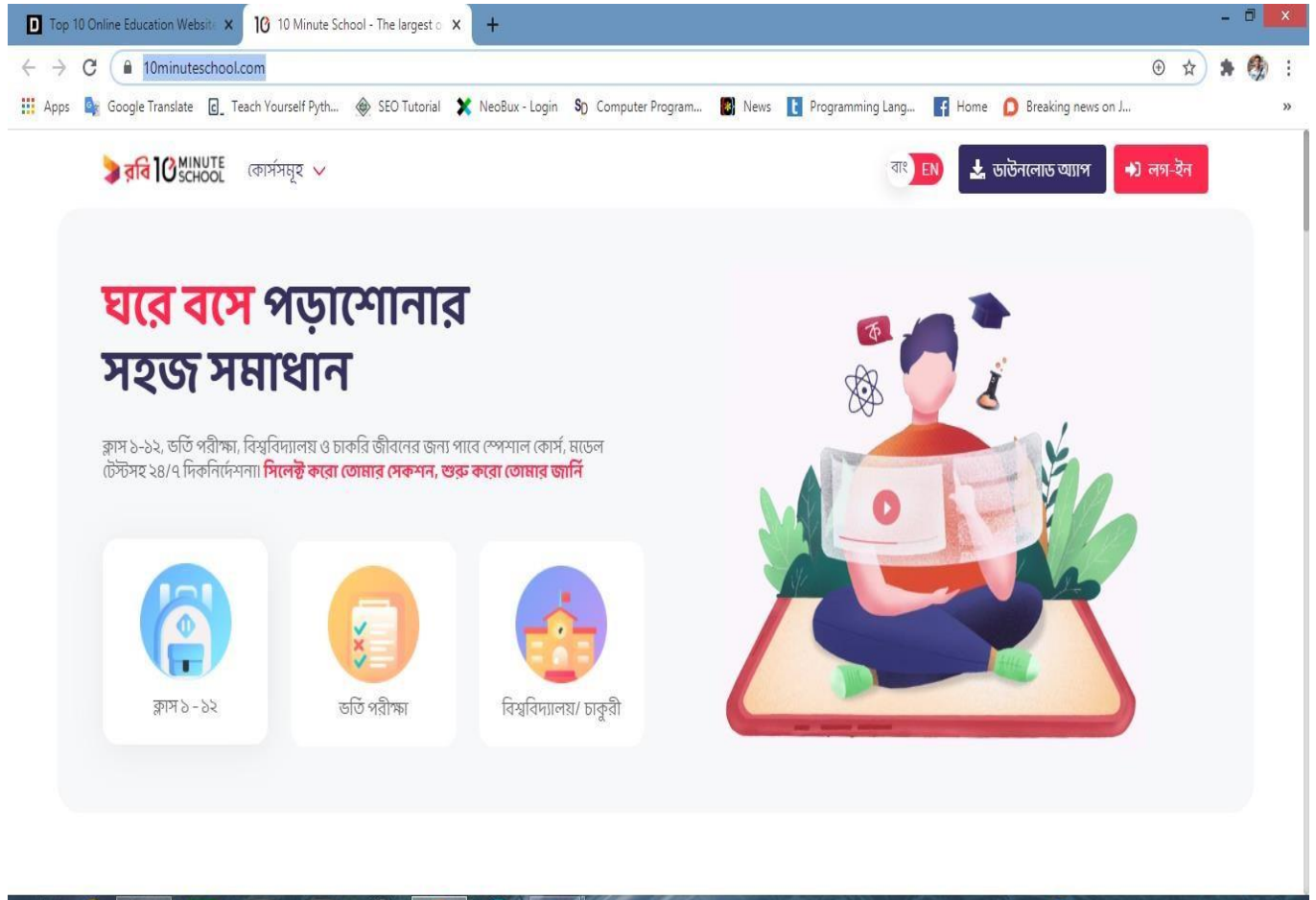
- **High internet connectivity:** it is very important to ensure high internet connectivity to get better service of internet in education. If we build high quality system but the central internet connection is slow, we will not be able to get better service.
- **Handling huge presser:** If we use proper internet connection, web technologies, domain, hosting, data center, accurate data storage can handle huge traffic together.
- **Ensure trust:** Government should announce and enforces few low regulations to do collaboration with two companies as they can trust each other and use each other system with legal permission.
- **Easy training support:** As many users are not able to use internet properly, government and private sector authority can arrange regular training on varieties to make use to the user with internet.

3.3 Comparison of three/four leading solutions-

Every system has few strength and special functions and limitation then others. When developing my system, I analyzed many existing websites which are similar to my system.

I have tried to find strength of those which I can implement in my system. Below I give a comparison with three websites which are similar to online exam and learning system.

1. Ten Minute School (<https://www.10minuteschool.com>) :



Ten minute school is most popular and leading educational web site in Bangladesh. Almost 1500000 students visit the website every day. The website complete focus on our local education and has sponsor support from leading telecommunication company Robi.

Best Features:

- Responsive log in and registration process.
- Thousands of videos from expert.
- Efficient to use.
- Built mobile app already.

Limitations:

- Do not focus on technical subjects.
- Job searching facilities does not available.
- Immediate feedback does not available.

2. Repto Education Center (<https://repto.com.bd/login?ref=SGID3>) :

REPTO থেকে নিন সার্টিফিকেট এবং গ্যারান্টি সহকারে চাকরি। বিস্তারিত পড়ুনঃ

Welcome to REPTO Education Center (v2.0) +8801701 66 66 55 support@repto.co

REPTO EDUCATION CENTER

Search What you want to Learn

JOBS SUCCESS STORIES ALL COURSES BLOG CREATE COURSE LOGIN OR SIGN UP

ঘরে বসে আপনার স্কিল ডেভেলপ করুন এবং গড়ে তুলুন আপনার স্বপ্নের ক্যারিয়ার।

New to REPTO? Sign up now

Full Name

mohaimenuislam09@gmail.com

+88 Phone Number

JOIN REPTO

By signing up, you agree with our [terms and conditions](#).

Existing user? Sign in now

mohaimenuislam09@gmail.com

LOGIN

Forgot Password ?? [Click Here](#)

[Continue with Facebook](#)

Ripto is another popular educational website in Bangladesh. It is like local version of udemy and it is very useful and simple to use.

Best Features:

- Easy login and registration.
- Nice navigation.
- Have job searching facilities.
- Focus on technical subjects mostly.

Limitations:

- Do not focus on academic subject.
- Online exam facilities does not exist.
- Not all content are free.

3. Shikkhok Batayon (<https://www.teachers.gov.bd/>) :

This system was developed by Bangladesh government and the goal of the website is bringing digitalization on Bangladesh education. This system mainly focus on local school level education.

Best Features:

- Easy registration and login.
- Takes less time to load.
- Very nice and easy navigation.
- Content available from expert government teachers.

Limitations:

- Only focus on school level education.
- No exam facilities available.
- No job searching facility available.

3.4 Recommended approach

I analyzed all three recommended systems which I selected and analyzed it part by part and did necessary task by using tasks. When analyzing I identified few features and functions which I can add in my system and update few features as my system be efficient and can achieve its goal and objectives. Below I described those function and features which I identified-

- Using attractive and easy registration and login with only necessary data.
- Use efficient user interface as user can use it without any problem.
- Use proper alignment of content.
- Combine both technical and academic subjects.
- Adding job searching facilities with online learning.
- Adding efficient exam facilities both mcq and written.
- Showing students' progress.
- Adding immediate feedback facility.
- Regular questions and content.
- Improve responsiveness.

Chapter 4 – Methodology

4.1 What to use:

Software development methodologies are improving day by day. New technologies are inventing which making software development easier then before. There are many software development methodologies use now a days such as waterfall model, prototype methodology, ASDM, RDA, DSDM (Dynamic System Development Methodology), spiral model etc. At first I find out required function for my project and then match it with all available software development methodologies. I selected waterfall model that allocate a project into liner sequential phases. Every phase of waterfall model depends on the completeness of previous phase that help to complete a project properly.

Waterfall model has six steps which are Analysis, Design, Implementation, Testing, Deployment, and Maintenance.

4.2 Why to use:

I chose DSDM (Dynamic System Development Methodology) for many reason and definitely it's for advantages. Below I mention why I chose it –

- DSDM model is very easy to understand and simple.
- The deliverables of functionality are quick.
- It saves developer time and effort.
- Best suite with my project.
- It is very easy for test and analysis.
- It can save money and help to find the specific goal of my project.
- Give proper guideline to maintain a project.

4.3 Sections of methodology

Pre-project:

This is the primary stage of project where a decision take weather the project will run or not. All project requirement, planning, budget, time all requirements species in this stage. This stage in important because if we make mistake we will may hamper.

Feasibility study:

Feasibility study is an important analysis which assist to find the permanence of a system weather it technical, legally and economically favorable or not. It helps developer to make decision whether they should invest their time, money and effort on it or not.

Foundations:

This stage gives an overall understanding of the needs of the project and it gives ideas to how to implements those need efficiently. We will use MoSCoW prioritization to determine what goals are and how successfully achieve it. At the end of the phase we will get when we can complete the system.

Evolutionary Development:

This phase is about to time box where time boxing use to monitor each small iteration of phase. After one by one the whole iteration will be finished. Moscow prioritization will use to prioritize time box iteration that which one will complete or done first.

Deployment:

The proposed system become ready to release in this phase. After the end of the phase user can use the system.

Post-Project:

Post project phase will come after completing deployment phase. In post project phase we complete the whole project and complete its documentation also. After completing it we will give it to client.

Implementation plans:

Before finishing the project we have to do some more things for that we have to go through some procedures those are – **Testing:**

Testing is very important part of software development. In testing part we test all short of part any if find any fault try to solve it immediately. I DSDM model it test all part of project one by one and it ensure the efficiency of system.

Documentation:

Documentation is one of the vital part of a project because it describes and illustrates everything about a project. It describes all functions, features, strengths, weakness and all other things anyone want to know about a project. It helps people how to use a project properly and I maintain all steps to make better documentation.

Evaluation:

In this phase project evaluation has been done for a project. Project evaluation helps to identify that all goals are achieving or not.

Chapter 5 – Planning

5.1- Project plan

Project planning is the most important part to make a successful project. There must be a plan for any type of project. The success of a project depends on an appropriate plan. If there is no plan for project the risk of failure is high for any project. We must make a project plan before starting its implementation and design. Below I describe all plan which I make for my system such as work break down structure, time boxing and gantt chart.

Work Breakdown Structure (WBS)

WBS is very effective technique in project development which break tasks into some smaller phase which makes work more flexible, manageable and approachable. It helps to bring balance in timing, costing of balance. I followed the structure in my project development. This technique helps me to complete my system in time and properly.

Below I give a table which show how I divide my tasks following WBS structure.

No	Name of The Tasks	Duration	Start Date	Finish Date
01	Initial study of the project	5 days	12/06/2020	17/06/2020
02	Project proposal	6 days	18/06/2020	24/06/2020
03	Analysis of the project	8 days	25/ 06/2020	03/07/20202
04	Design of the project.	6 days	04/06/2020	10/07/2020
05	Implementation of the project	20 days	11/07/2020	01/07/2020
06	System testing	6 days	02/07/2020	03/07/2020
07	Project documentation	10 days	04/07/2020	14/07/2020
08	Final project	5 days	15/07/2020	20/07/2020
	Total Time	66 days		

Time Boxing

Following time boxing is most important technique to complete a project in time. It fixed a time period for a specific task, within that time those time must be completed. When set time box for any we must consider the difficulty and function of tasks. I have followed time boxing method properly in my project development. I have divided all tasks into fore parts. Below I give an overview of time box pf my system.

Time Box	Tasks Title	Name Of Resource
T-1	Introduction	Analyst
	Initial Study	Analyst
	Literature Review	Analyst
	Methodology	Analyst
T-2	Planning	User, Analyst
	Feasibility	Developer, Analyst
	Foundation	Developer, Analyst
	Exploration	Developer, Analyst
T-3	Engineering	Developer, Analyst
	Deployment	Tester, Developer
	Testing	Tester, Developer, User
	Implementation	Analyst, Developer, User
T-4	Critical Appraisal & Evolution	Analyst
	Lessons Learned	Analyst, Developer, Tester
	conclusion	Analyst

Figure: Time boxing of the proposed system **Gantt chart:**

Test Plan

We must need to do test in every phase of software development. For proper testing we need to make appropriate test plan as we can successfully make accurate application. Doing test in every phase of development reduce the risk of project failure. I make test plan for my system development.

Testing against time boxes

We must need to test tasks against time boxes. I do test against all time boxes. Here give an overview.

User name	Example	Role	Example
Time box ID			
Time box content			

Test type	Test steps	Expected result	Actual results	Comment
Unit test				
Integration test				
System test				
Acceptance test				
Security test				
Usability test				
Reliability test				

5.2.2Require testing

Testing is vital part of any software development. It improves accuracy, efficiency and help to achieve perfect goal. There are varieties of software testing available. I do testing

based on my project which need for my system. Below I give over view of testing which I have done- **Functional testing**

Unit testing

In unit testing individual unites of software components have been tested.it focus on that each unit of software code works properly as it should be. I have done unit testing in my system.

Integration testing

After unit testing we need to do integration testing. In integration testing all small individual software phase combined and tested as whole group. It helps to evaluate and identify specified functional requirements of system. I have done integration testing in my system.

System testing:

We do system testing after integration testing. It is very important because in that phase of testing we do a test of whole complete integrated system to evaluate the weather if fulfil the particular requirements or not.

Acceptance testing:

The acceptance of a system is test in this phase of testing. It a testing technique which determine whether or not software system meets its requirements specifications. This testing also helps to identify of system business acceptance.

Interface Testing

System user interface has been tested in this phase of testing. It checks whether it meets the graphical user interface of system. It normally done with verities of test cases.

Performance testing:

It is one of the most important test in testing phase. It test the performance of system which is the strength of a system.it test all function of a system to find concept of its performance.

Chapter 6 – Feasibility

To analyze the validity of a project feasibility study is important. If focus on economical, technical, operational part of the project. It gives is an idea whether it economically, technically and operationally possible or not. Developer get idea that whether they should invest their time and money on it or not from feasibility study.

Here I provide a description feasibilities study which I have done for my system.

6.1 Economic Feasibility

According to my feasibility study I found few options in terms of economy and components. I define few option as I can choose best one from them.

Option 1:

Sl.	Components	Price(Taka)
1.	Laptop Computer	45000
2	UPS	2800
3	Software(Operating System, Utility, Internet)	1800

4	Server PC	48000
5	Domain Registration	6500
6	Web Hosting	8000
7	Printer	8000
8	Network Accessories(Router, Cable)	3500
Grand Total		123600

Option2:

Sl.	Components	Price(Taka)
1.	Laptop Computer	40000
2	UPS	3200
3	Software(Operating System, Utility, Internet)	1800
4	Server PC	46000
5	Domain Registration	7500
6	Web Hosting	8000
7	Printer	8000
8	Network Accessories(Router, Cable)	3500
Grand Total		118000

6.2 Technical Feasibility

Technical feasibility is very important for software development because all technical requirements of a system. It is an analysis which helps to determine whether available technical resources are enough to complete the proposed project or not. It gives the idea that the possibility of project success by existing expert of development team. According to my project technical feasibility I hope I could be able to manage all technical resources for my project. All the technical resource which I have such as computer, server, network components, hardware, printer, web technologies are perfect to complete my system properly. I have used programming languages such as html, css, php, javascript, node js, and MySQL database in my development. Below I give a table chart of my resources which I have been used –

Hardware	Laptop (8 gb ram/ 1tb hard disk) Wi-Fi router Ips
Software	Google chrome Xampp Microsoft office Adobe Photoshop Adobe premiere pro Windows 10 Php storm latest version Notepad ++

6.3 Operational Feasibility:

Operation feasibility focus on the accuracy of system as how efficiently a proposed system can system problems. I have try to maintain operational feasibility accurately in my system as a result I cab be able to get my project goal. My system is very user friendly, reliable, trustable, responsive because I maintain operational feasibility properly. The success of a system is depend on its developer expertness and operational feasibility gives them idea of proper development. All the function of my system work properly for example log in, registration, exam, live video etc.

6.4 Cost Benefit Analysis

Cost benefit analysis gives an idea that the money and time which we spend on a system is benefited or not. I have done a cost benefit analysis for my project to get idea of on it. Below I give a chart on it –

Resource Need	Cost (BDT)
Hardware	55,000
Software	52,000
Hosting	1000
Development	28,000
Maintenance	10,000
Implementation	20,000
Total	1,66,000

6.5 Benefit of the project:

Basic for	Cost (BDT)
Business Improvement	100000
Productivity improvement	40,000
Saving from changes	65,000
Total	205000

6.6 DSDM – good or not for this project

DSDM is very effective for my project because it is an iterative and incremental technique which definitely good for a project. We can fulfil all the requirements of the system because DSDM ensure quality, make proper collaboration with development team members and helps to make accurate decision when necessary. It reduces the risk of failure because it is an iterative methodology which focus on tasks part by part. As it works on small phase by phase developer can easily solve if any error occurs. It focus on time boxes properly which ensure the ending of project in time. It increase productivity and accuracy of my project as it follows all techniques properly.

Chapter 7 – Foundation

7.1 Overall Requirement List

The main two types of system requirements which are functional and non-function requirements. Below I give the list of those requirements –

Functional requirements of my proposed system are given below:

- + Registration and login.
- + User data validation.
- + Update user info.
- + Search for subject.
- + Take part in exam.
- + Show immediate exam result.
- + Job search.
- + Give feedback on content.
- + Show student progress.
- + End exam when time ends.
- + Regular update.
- + Log in.

List of non-functional requirements:

- + Responsiveness.
- + Good performance.
- + Reliable.
- + Secure.
- + Maintable.
- + Scalable.
- + Recoverable.

7.2 What Technology to be implemented(Client/Web/Standalone):

I many technologies in my system. There are many option available for any project development, from all of those I have chosen both client server and web server for my system development. Below I give an overview on both on them.

Client server application:

Client server is an application which runs on client computer from there it can make request to remote server. When client request a service server deliver it to client. There are many high level application use this technique. An (Application Programming Interface) API is used to make interaction of client-server easier. API handle the operating system and communication function. Client machine need to install it in the machine. It is robust and expensive to use. One drawback of it is it cannot handle large number of user at the same time.

Web server application:

The basic job of an web server application is deliver web content to its client but it also play role to make interaction between end user client and server side application. Most web server can generate dynamic content based on server side logic and most web server support plug-in setup which helps to support dynamic content. It supports multiliar architecture and has access to all browser which in very useful. I use web server application as I need dynamic content generate.

7.3 Recommendations and Justifications

Analyzing both option I think using web server application will suite to my system because it is easy to use and can generate dynamic content. As my system is a dynamic system and need to use many necessary plug-in web server application is necessary for my system.

Justifications:

- ✚ One advantage is that large number of user can use it at the same time.
- ✚ Easy to use no need extra installation which helps to increase efficiency.
- ✚ It is reliable and faster and easy to maintain.

Chapter 8 – Exploration

8.1 Prioritized Requirement List (PRL)

Requirements identification is one of the important tasks for any project. It helps to properly identify requirement and the possibility of making successful project will increase. Before implementation I have identified all requirements of my system and those are basically two types of which are functional and non-functional requirements. I give in tables below-

Functional Requirements

Sl.	Functions	Priority
1	Creating Users Accounts	Must Have
2	Log in	Must Have
3	Updating Users Accounts	Must Have
4	Deleting Users Accounts	Must Have
5	Getting User feedback By Commenting	Should Have
6	Take Part In Exam	Must Have
7	Evaluating Progress Online	Must Have
8	User Online Support	Could Have
9	Job search	Must Have
10	Log out	Must have

Chapter 9 – Engineering

9.1 New System Modules

The new system modules deploy properly and we added all necessary development. The main modules are login-registration module, content uploading module, exam operation module etc.

9.2 Use Case

Use Case Diagram

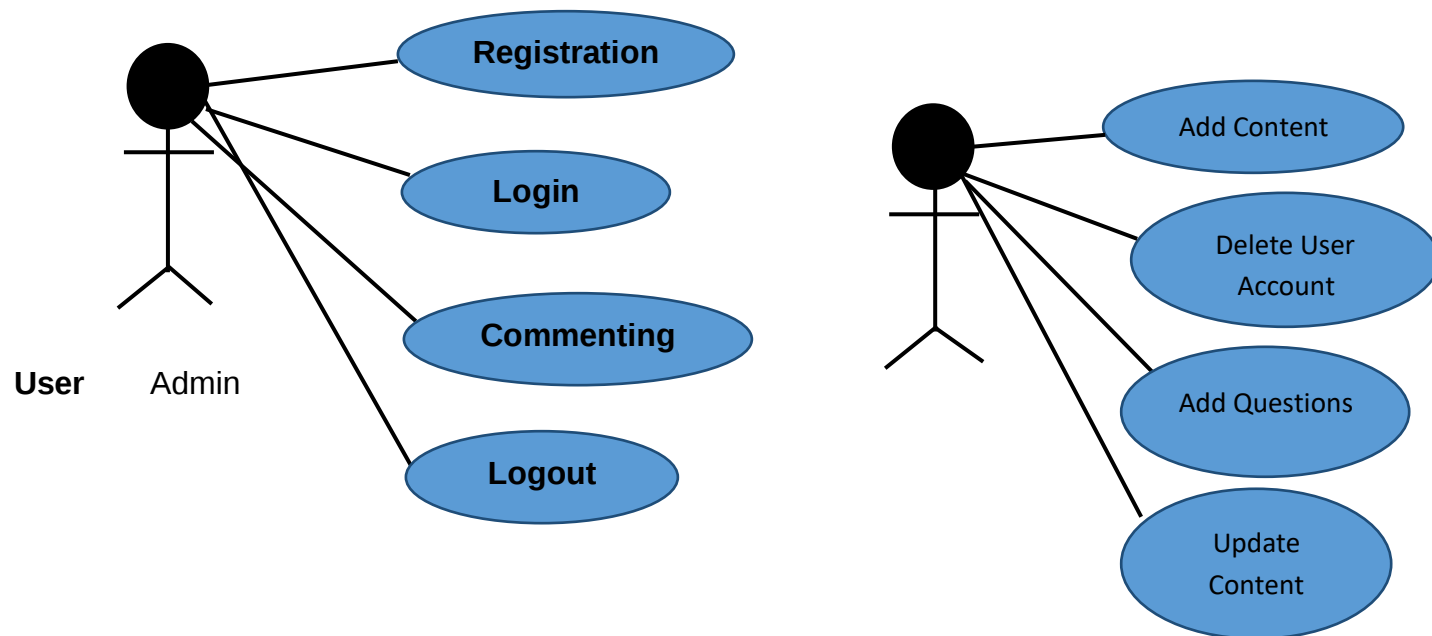
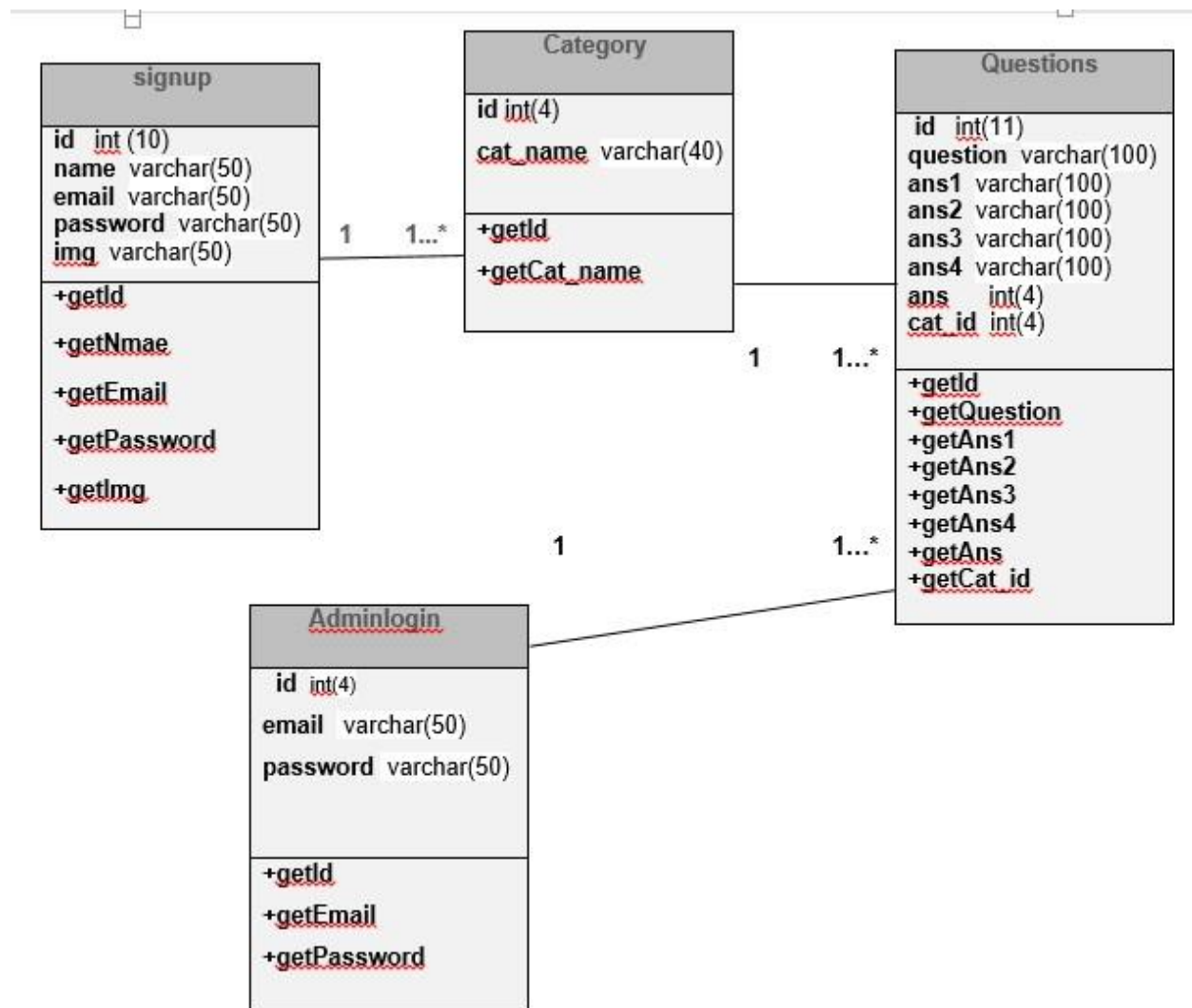


Figure: The Use Case Diagram of my proposed system.

9.3 Class Diagram



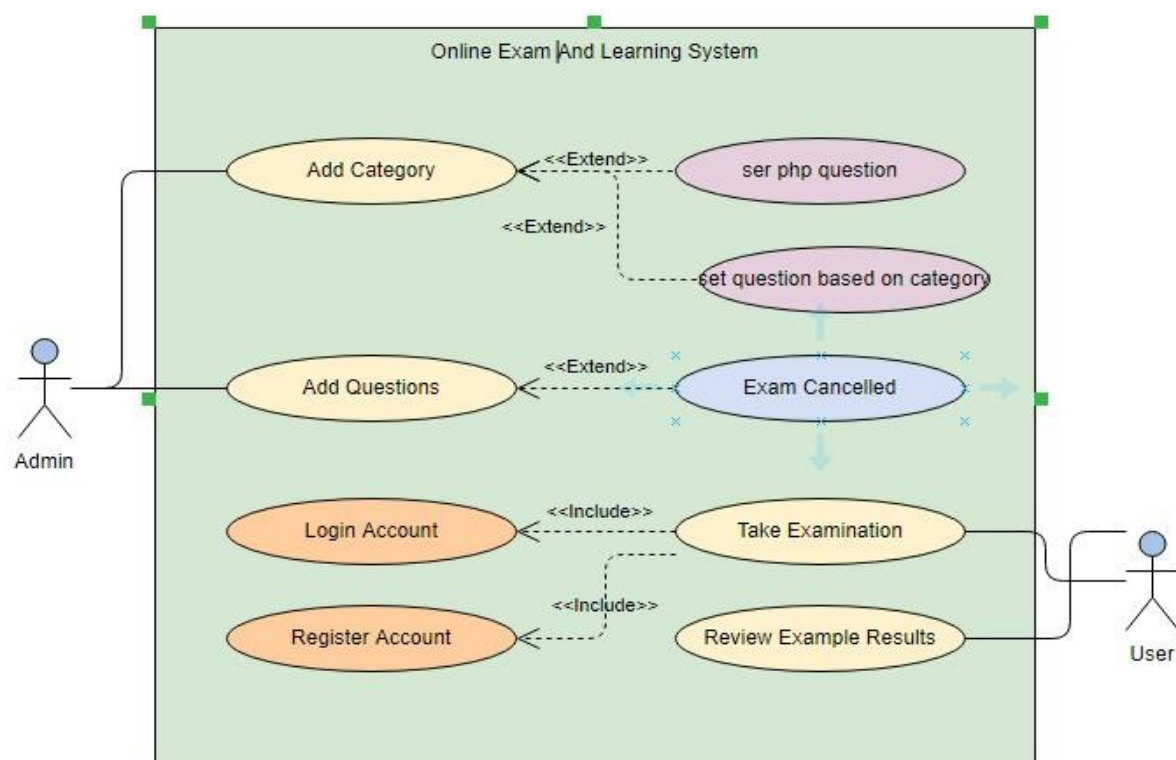


Figure: sequential diagram for online exam and learning system.

9.4 System Interface Design / Prototype

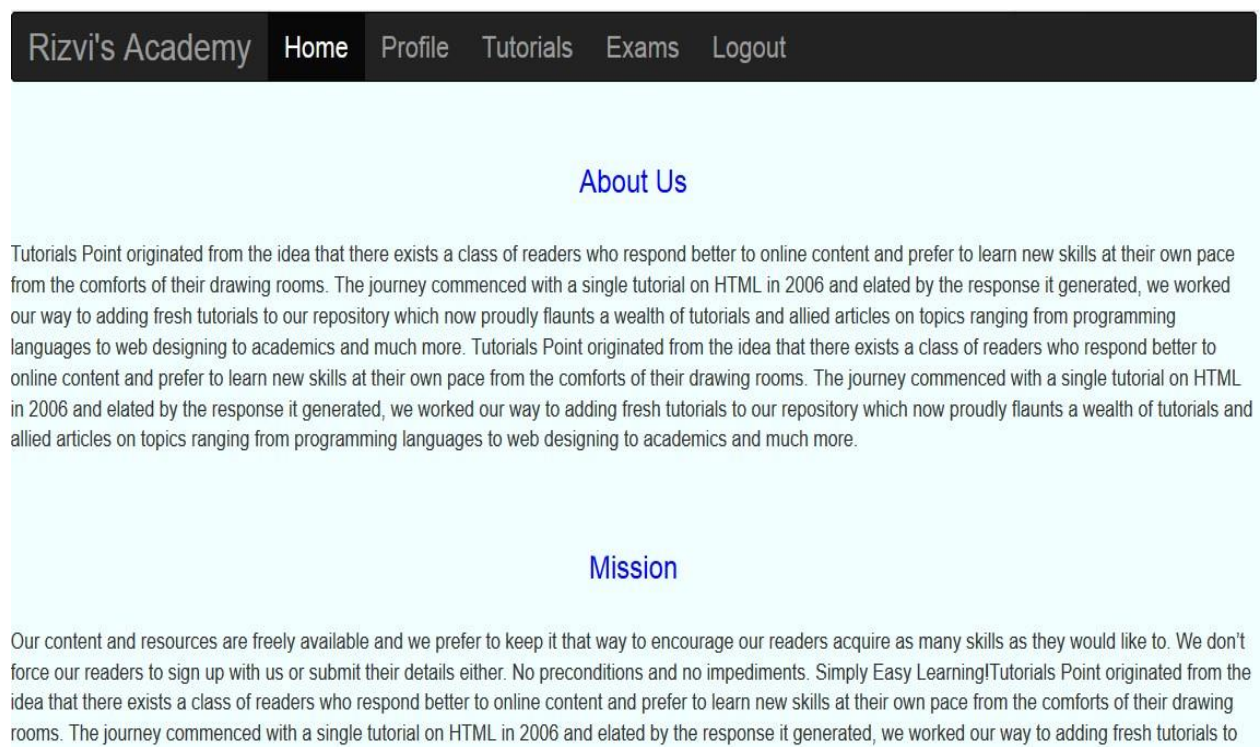


Figure 1: Interface of Home Page.

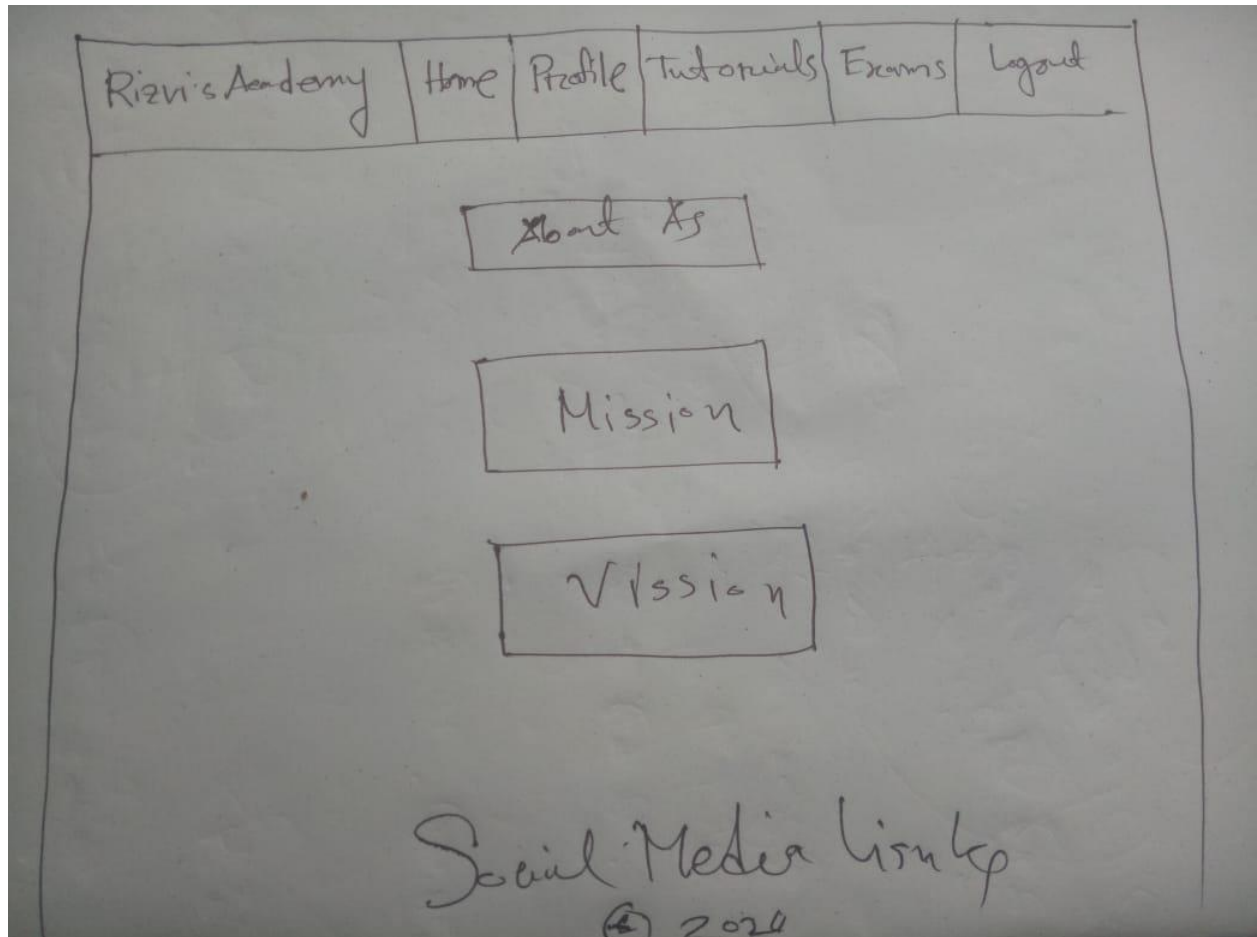


Figure 2: Prototype of my system home Page.

Chapter 10 – Deployment / Development

10.1 Possible problem break down

It is very effective when you divided your work in small piece of phase. It will help to mare more efficient, robust and error free system and it also makes system development easy. In my system I have followed divide and conquer policy in every phase of development. Below I describe all part which I follow to break by tasks.

- I. **Interface design:** At first I focus on design part of my system because design makes first impression on user. I have made a proto type of my system first. I made few options and select the best one which best suite with my project.
- II. **Implement all functions:** After design I have focused on implementing function of my system. I identified all required functions one by one and complete them one by one. I prioritize function and complete them considering their priority.
- III. **Making Database:** After implement functions I made database for my system. I identified which data I need to store and how many table do I need. I make database in MySQL database in php my admin and make database for both user and admin panel.
- IV. **Deployment of system:** It is the most important part where I develop main part of the system. I used programming language such as html, css, php, JavaScript, node js to develop my system.
- V. **Proper validation and final release:** In the final stage I have ensured the proper validation of data in my system and analyzed risk management and other factors and finally release my system.

Chapter 11 – Testing

11.1 Test Case

Testing

We need system to check whether an application work properly and weather it meet requirements. It helps to identify defects in development phase which assist developer to solve immediately and testing ensure to fulfil all requirements of system. There are many type of testing we do in development phase such as unit testing, integration testing, interface testing etc. I did to main tasting which are –

1. Unit Testing

2. Integration Testing

6.4.1 Unite Testing

Test-Unit test	Tests: 1	Class: User		Developer: Mohaimenul Islam
Resource of data: signup_sub.php, user.php	Purpose: Test user registration			Tester: Mohaimenul Islam
Test Case	Statement	Tasks	Anticipated Result	Actual Result
1.1	Checking whether user registration work with function or not.	Name, email, password, image	Notify user if incorrect email, password or other data. If successful will show message.	Work successfully. Show both error and correct message.

Test-Unit test	Tests: 2	Class: signin		Developer: Mohaimenul Islam
	Purpose: Test user log in			Tester: Mohaimenul Islam
Test Case	Statement	Tasks	Anticipated Result	Actual Result
1.2	Check that user can Log in with valid data and validation.	email, password,	If user give accurate data then can log in otherwise there will show a message that data incorrect.	Work successfully. Show both error and correct message.

Welcome To Rizvi,s Academy.
Here you can learn and be able to evaluate yourself online.

To Use The Website Please Sign Up first

Log In

Email:

Password:

☐ Remember me

Sign Up

Name is required .

Name:

Email:

Password:

Upload Your Image:

No file chosen

☐ Remember me

Activate Windows
Go to Settings to activate

Figure: If user submit without name and other data a message will show that data required.

Sign Up

Password is required .

Name:

Email:

Password:

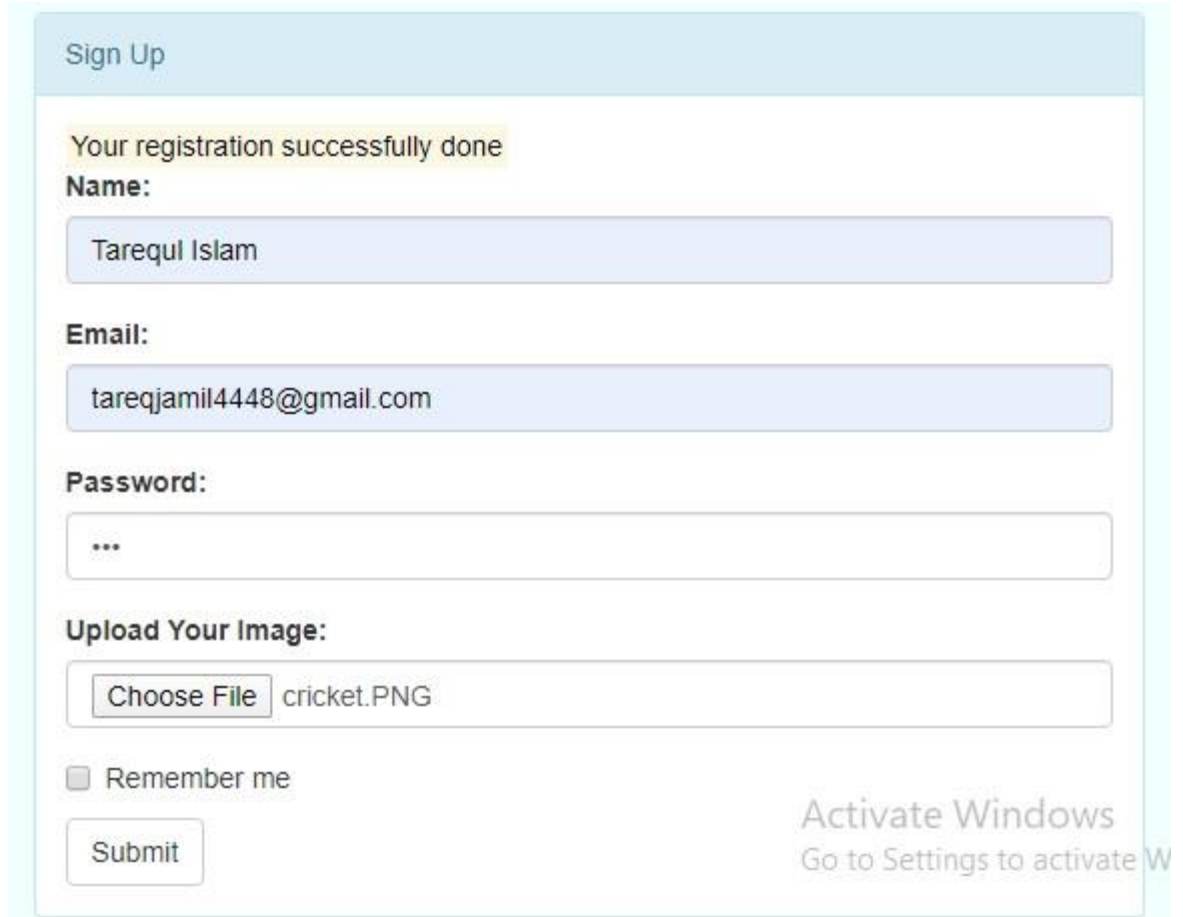
Upload Your Image:
 No file chosen

☐ Remember me

Activate Windows

Go to Settings to activate Windows

Figure: Show message password required.



The image shows a 'Sign Up' form with a light blue header. Below the header, a yellow highlight box contains the text 'Your registration successfully done'. The form fields are labeled 'Name:', 'Email:', 'Password:', and 'Upload Your Image:'. The 'Name' field contains 'Tarequl Islam', the 'Email' field contains 'tareqjamil4448@gmail.com', and the 'Password' field contains three dots. The 'Upload Your Image' section has a 'Choose File' button and the text 'cricket.PNG'. There is a 'Remember me' checkbox and a 'Submit' button. In the bottom right corner, there is a watermark that says 'Activate Windows Go to Settings to activate W'.

Sign Up

Your registration successfully done

Name:

Tarequl Islam

Email:

tareqjamil4448@gmail.com

Password:

...

Upload Your Image:

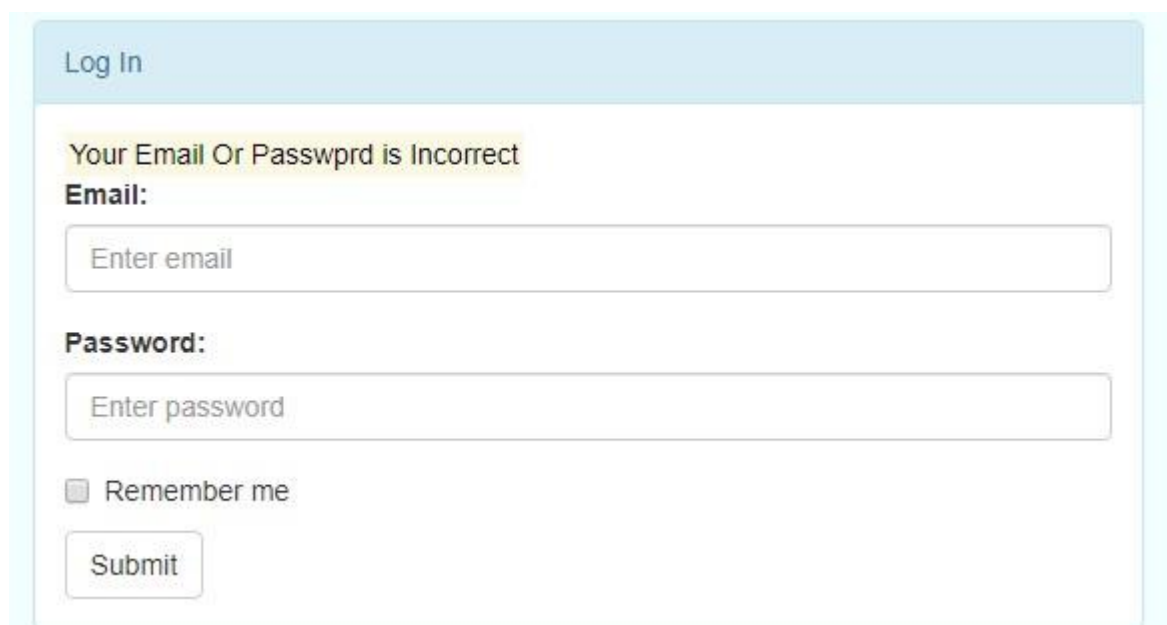
Choose File cricket.PNG

☐ Remember me

Submit

Activate Windows
Go to Settings to activate W

Figure: When give all data show message that successfully registration done.



The image shows a 'Log In' form with a light blue header. Below the header, a yellow highlight box contains the text 'Your Email Or Passwprd is Incorrect'. The form fields are labeled 'Email:' and 'Password:'. The 'Email' field contains the placeholder text 'Enter email', and the 'Password' field contains the placeholder text 'Enter password'. There is a 'Remember me' checkbox and a 'Submit' button.

Log In

Your Email Or Passwprd is Incorrect

Email:

Enter email

Password:

Enter password

☐ Remember me

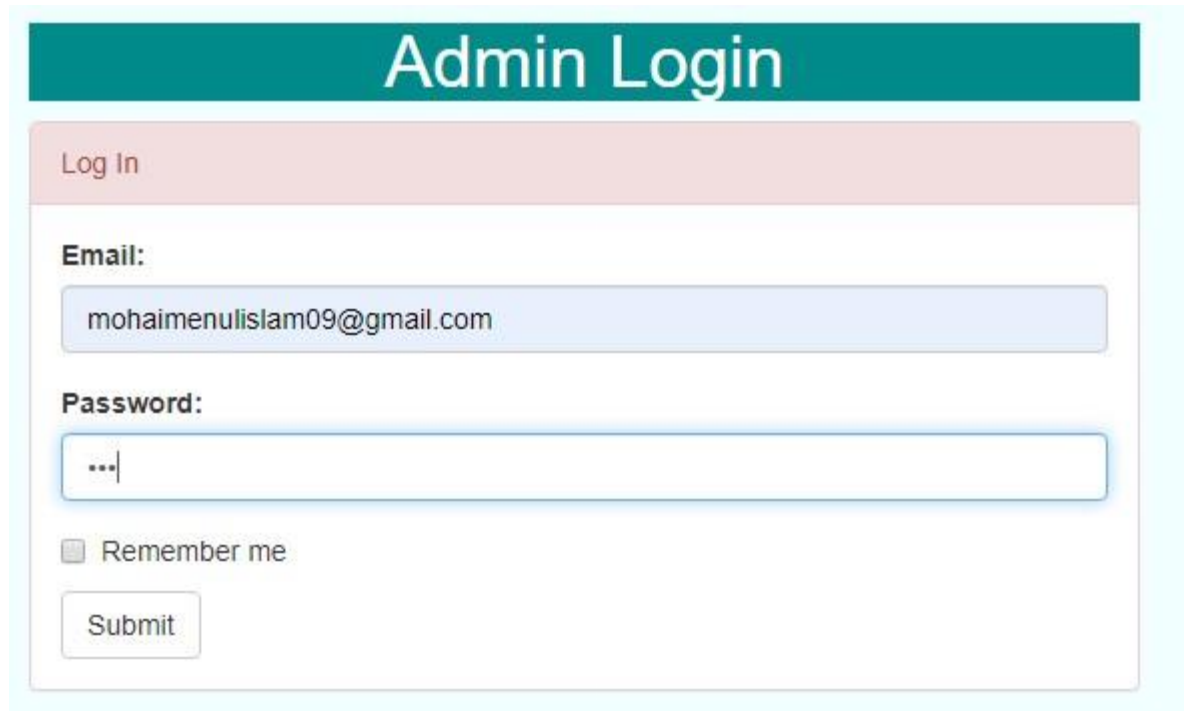
Submit

Figure: If user do not provide correct data message show that data incorrect in login form.

6.4.2 Integration Testing

Integration testing: tast1		Tests class: questions	Designed by: Mohaimenul Islam	
Data source:		Objective: Questions Adding through adminpanel.	Tester: Mohaimenul Islam	
Test case	Description	Tasks :	Expected result	Actual result

2.1	After login with admin panel a dynamic question adding panel will appear.	Admin can add question based on category and answer of question which will add database in questions table.	When submit button after adding question choice and answer questions will add.	Questions add successfully and show in database
-----	---	---	--	---



The image shows a web form titled "Admin Login". It has a teal header with the title. Below the header is a light pink bar with the text "Log In". The form contains two input fields: "Email:" with the value "mohaimenulislam09@gmail.com" and "Password:" with a masked password "..." and a toggle icon. There is a "Remember me" checkbox and a "Submit" button.

Admin Login

Log In

Email:

mohaimenulislam09@gmail.com

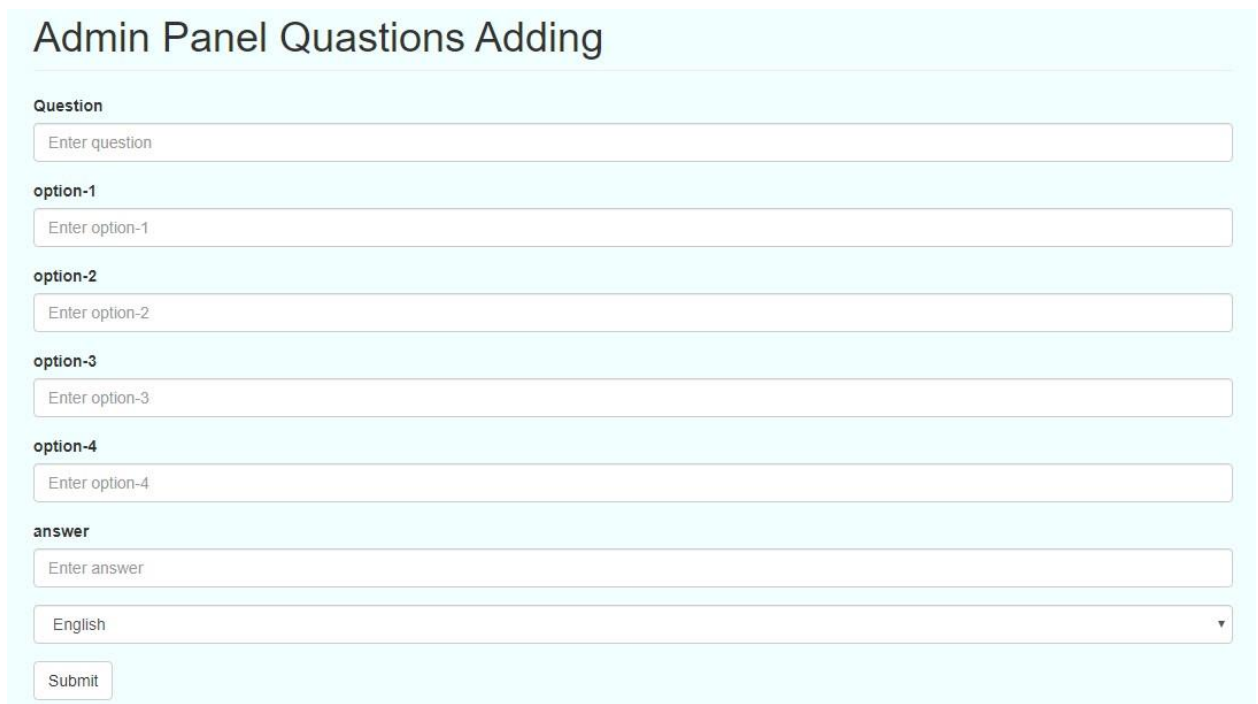
Password:

...|

☐ Remember me

Submit

Figure: Admin can log in with email and password.



The image shows a web form titled "Admin Panel Questions Adding". It has a light blue header with the title. The form contains several input fields: "Question" with placeholder "Enter question", "option-1" with placeholder "Enter option-1", "option-2" with placeholder "Enter option-2", "option-3" with placeholder "Enter option-3", "option-4" with placeholder "Enter option-4", and "answer" with placeholder "Enter answer". There is a dropdown menu for language selection, currently showing "English", and a "Submit" button.

Admin Panel Questions Adding

Question

Enter question

option-1

Enter option-1

option-2

Enter option-2

option-3

Enter option-3

option-4

Enter option-4

answer

Enter answer

English

Submit

Figure: Question adding form.

Admin Panel Questions Adding

Question

English language is own by ?

option-1

A.British

option-2

B.American

option-3

C.Italian

option-4

D.German

answer

A.British

English

Submit

Server: 127.0.0.1 » Database: online_exam_learning » Table: questions										
Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers										
		question	ans1	ans2	ans3	ans4				cat
☐	Edit Copy Delete	20	first 50 natural number...	A. 25.30	B. 25.5	C. 25.00	D. 12.25	0	1	
☐	Edit Copy Delete	21	Question 1. The average of first 50 natural number...	A. 25.30	B. 25.5	C. 25.00	D. 12.25	0	1	
☐	Edit Copy Delete	22	Q.1 World Tourism Day is celebrated on-	(A) September 12	(B) September 25	(C) September 27	(D) September 29	0	1	
☐	Edit Copy Delete	23						0	1	
☐	Edit Copy Delete	24	Question 1. The average of first 50 natural number...	A. 25.30	B. 25.5	C. 25.00	D. 12.25	0	1	
☐	Edit Copy Delete	25	Question 1. The average of first 50 natural number...	A. 25.30	B. 25.5	C. 25.00	D. 12.25	0	2	
☐	Edit Copy Delete	29	Q.1 World Tourism Day is celebrated on-	A. 25.30	B. 25.5	C. 25.00	D. 12.25	2	1	
☐	Edit Copy Delete	30						0	1	
☐	Edit Copy Delete	31	Q.1 World Tourism Day is celebrated on-	A. 25.30	B. 25.5	C. 25.00	D. 12.25	3	1	
☐	Edit Copy Delete	32	English language is own by ?	A.British	B.American	C.Italian	D.German	0	1	

Figure: Question add and save in database.

Integration testing: test 2		Tests class: category	Designed by: Mohaimenul Islam	
Datasource: qus_show.php		Objective: show question in website and result when submit.	Tester: Mohaimenul Islam	
Test case	Description	Tasks: show question in user panel and when user submit answer form result will show with percentage.	Expected result	Actual result
2.2	When admin add question from admin panel those questions will appear in user panel and user can participate in exam with in limited time.	Check whether the task work or not.	Show question and show result when submit result.	The function work properly as expected

Rizvi's Academy
Home
Profile
Tutorials
Exams
Logout

Participate In Online exam and Evaluate Your Progress.

Choose Subject

Mathematics

submit

© Copyright 2020. All Rights Reserved.

Figure: select category From subject list.

Online Quiz

5:54

1 Q1. I tennis every Sunday morning.

☐ playing

☐ play

☐ am playing

☐ am play

2 Question 1. The average of first 50 natural numbers is

☐ A. 25.30

☐ B. 25.5

☐ C. 25.00

☐ (D) September 29

3 Question 1. The average of first 50 natural numbers is

☐ A. 25.30

Figure: Showing question on website.

Your Quiz Exam Result.

Total Number Of Questuions	15
You Attempted	14
Right Answer	9
Wrong Answer	5
No Answer	1
Your Result	60%

Figure : Show result when submit answer.

Chapter 12- Implementation

12.1 Training

Although internet user are increasing in Bangladesh, but most of them are not good at it. Furthermore I good system must have a guideline of its use. Sometimes it is necessary of training for few system as all users are not capable of to understand and adopt with new system. Although my system is very user friendly website but there are few users they always face difficulty to use it. I manage a training session for few user as they easily use it and then they help other to describe about it. I have consider the matter and have made a guideline video which will give a whole guideline of how to use the system. I provide a description below-

Serial No.	User name	Training Area	Duration	Details
01		How to regist and log in.	1 hour	A user must need to register to use our system so proper registration with proper validation is mandatory for any user.
		How to		There are varieties of content are available in the website, user must need to

	User	usecontent.	½ hour	know how to find it and how to use it.
		How to participate in exam.	1 hour	User need a proper guideline that how to take part in exam.
		How to search for job.	½ hour	User need to know how they can search for their desired jobs.
02	Admin	How to add content.	40 min	All content such as audio, video, word file, pdf file, questions, answers admin will add dynamically.
		How to manage user.		Admin can manage user.

			1/2 hour	
--	--	--	----------	--

12.2 Big Bang/ Direct installation approach:

Big Bang/Direct installation approach is a technique where old system replaced by the new system and all user deny to use old system and start to use new system. The efficiency and usability of new system depend on existing system efficiency. The big bang approach is very faster as existing is not use in this system. Big Bang approach is used by almost all software development as it is reliable and robust approach. Although it has many advantages, it has some disadvantages too such as the possibility of losing data when transfer data from one system to another.

Chapter 13 – Critical Appraisal and Evaluation

13.1 Objective that could be met

- The success rate of each objectives.
- How efficiently requires functions work.
- How much could have been done.
- How better the solutions of features.

Objective that could be met: I have identified objectives my system. Below I have described all of them.

- ✚ Build the system following appropriate software development methodology.
- ✚ Make efficient and robust user interface as anyone can use it.
- ✚ Make sure all functions of the system work properly and securely.
- ✚ Make sure admin panel work properly.
- ✚ Make sure system has proper validation.

Objective-01: Build the system following appropriate software development methodology:

Success rate: I have followed the best methodology of software development which best suited for my system. I have followed DSDM software development technique for my system development and I have perfect result as all my requirements have fulfilled properly.

How much better could have been done:

Need more time to spend in research to find the best but can say that chose the best one. But if fine more time can gain better result.

Objective-02: Make efficient and robust user interface as anyone can use it.

Success rate: I have applied all available option to make proper user interface. I have used html, css, bootstrap, php, JavaScript to make the user interface which I desired. So success rate is perfect.

How much better could have been done: It possible to make it more efficient. If I could buy an attractive theme which may bring better result.

Objective-03: Make sure all functions of the system work properly and securely.

Success rate: The success of a system depend on how its functions work. I have used all latest programming languages and technologies in our system development. As I properly implement all method I can assure that all functions work properly.

How much better could have been done: Much better can be done with more analysis and effort, considering time and money that cannot be possible.

Objective-04: Make sure admin panel work properly.

Success rate: The admin panel is very important for my system as many function depend on admin panel. I have used all technique to make it proper and I think I can properly implement it.

How much better could have been done: it is possible to make better but I need more time to spend on it.

Objective-05: Make sure system has proper validation.

Success rate: Proper validation is vital for valid and loyal system. I have tried to make proper validation on data in my system.

How much better could have been done: It is possible to make better but I am satisfied with my system validation.

Chapter 15 – Conclusion

15.1 Summary of the project

The online exam and learning system is an educational website which aim to provide free education to students and job sackers. Its goal to become largest and most usable education website. It is very simple to use the website with easy registration and it has a simple user interface as any student can use it without any problem. It provide video, pdf, and live tutorial and user can participate online exam and can get immediate exam result

online. The immediate result will provide with percentage and answer explanation which will help students to evaluate themselves. Users can search for jobs which are available in local market for my system. This system has dynamic admin panel from where admin can add content dynamically and admin can handle user also.

15.2 Goal of the project

Important goals of this project are mentioned in below:

- ✚ Become the largest education system in country.
- ✚ Make efficient and robust system.
- ✚ Provide effective and necessary education for free.
- ✚ Build a platform for both students and teachers.
- ✚ Ensure immediate student progress with dynamic exam taking.

15.3 My experience

I have gained huge experience when building the system. There are lot of things to know. I learnt how to analysis, research and make plan to build something. I have to learn many new things to make my system which will be very useful in my life. In every stages of development I have learnt new things. Develop the system create opportunity to make collaboration to many of my friends and teachers. For this system I need to learn new programming and web technology which will be beneficiary in my future.

Appendices

Comparison of three/four leading solutions- page 6.
Big Bang Theories –page 7. Project goals – page 8.

References

<https://www.w3schools.com/> <https://www.w3schools.com/css/default.asp>
<https://www.w3schools.com/js/default.asp>
<https://www.w3schools.com/sql/default.asp>
<https://webpagesthatsell.com/strengths-weaknesses-various-website-platforms/>
https://www.tutorialspoint.com/system_analysis_and_design/system_analysis_and_design_over_view.htm <https://clutch.co/web-designers/resources/top-6-website-features-people-value>
<https://www.webalive.com.au/local-business-website-features/> <https://catswhocode.com/how-to-make-a-responsive-website/> <https://www.softwaretestingmaterial.com/software-testing/>
<https://www.guru99.com/software-testing-introduction-importance.html>
<https://www.geeksforgeeks.org/software-testing-basics/>
https://www.sebokwiki.org/wiki/System_Validation <https://validationcenter.com/computer-system-validation-how-to/> <https://online.visual-paradigm.com/diagrams/tutorials/use-case-diagram-tutorial/> <https://creately.com/blog/diagrams/use-case-diagram-tutorial/>
<https://www.softwaretestingclass.com/what-is-difference-between-unit-testing-and-integrationtesting/> <https://www.guru99.com/unit-test-vs-integration-test.html>
<https://performancelabus.com/unit-vs-integration-testing/>

All references you cite within the body of your report should be fully referenced here using the Harvard Style.

No reference should appear here unless it has been cited in the main body of the report.

Appendices

- Test Scripts
- User Guide

1. First user need to register.
2. Then can access with the register data.
3. Select subject and give exam.
4. Need to log in in admin panel (email- mohaimenulislam09gmail.com , Pass-123)

Welcome To Rizvi,s Academy.
Here you can learn and be able to evaluate yourself online.

To Use The Website Please Sign Up first

Log In

Email:

Password:

☐ Remember me

Sign Up

Name is required .
Name:

Email:

Password:

Upload Your Image:

 No file chosen

☐ Remember me

Activate Windows
Go to Settings to activate

Log In

Your Email Or Passwprd is Incorrect

Email:

Password:

☐ Remember me

Learn English, Mathematics, Bangla, PHP, Javascript, General Knowledge etc.....

Free English Language Lessons

Learn English Free Online - Includes English grammar lessons, games, quizzes, help with pronunciation, sections about British English, and more. Learn English | British Council - Learn English online for free with the help of this website from the British Council.

ENGLISH GRAMMAR

ADJECTIVES

In linguistics, an adjective is a word that modifies a noun or noun phrase or describes its referent. Its semantic role is to change information given by the noun. Adjectives are one of the main parts of speech of the English language, although historically they were classed together with nouns.

Video Tutorial On Adjectives



Admin Login

Log In

Email:

Password:

☐ Remember me

- System Code

Below I give some screenshot of my code of main functions.

```

1 <?php
2 include ("class/users.php"); // including user class in signup.php
3 $register= new users; //creating object of users class and store in variable register
4 extract ($_POST);
5
6 $img_name=$_FILES ['img'] ['name']; //for storing image by its name
7 $tmp_name=$_FILES ['img'] ['tmp_name'];
8 move_uploaded_file($tmp_name,"img/".$img_name); // to store image file in img folder.
9
10
11 Rectangular Snip
12 $query="insert into signup values('','$n','$e','$p','$img_name')"; // running query to insert data in database in signup table
13
14
15 if (isset($_POST['form'])) {
16
17 if ($_POST['n']=="") {
18     $register->url ("index.php?run=name"); // sending it to index.php file by url function
19
20     //$error_msg ['n'] ="Name is Required";
21 }
22
23 else if($_POST['e']=="") {
24     $register->url ("index.php?run=email");
25
26 }else if($_POST['p']=="") {
27     $register->url ("index.php?run=pass");
28
29 }
30 else {
31
32 if($register->signup($query)){ // calling signup function
33
34     $register->url ("index.php?run=success");
35

```

```

14
15
16 <!DOCTYPE html>
17 <html lang="en">
18 <head>
19 <title>Rizvi,s Academy</title>
20 <meta charset="utf-8">
21 <meta name="viewport" content="width=device-width, initial-scale=1">
22 <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
23 <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"></script>
24 <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
25 </head>
26 <body style="background-color:Azure;">
27
28 <div class="container">
29
30
31
32
33
34
35 <nav class="navbar navbar-inverse">
36 <div class="container-fluid">
37 <div class="navbar-header">
38 <a class="navbar-brand" href="#" style="font-size:28px">Rizvi's Academy</a>
39 </div>
40 <ul class="nav navbar-nav">
41 <li class="active"><a data-toggle="tab" href="#home" style="font-size:22px">Home</a></li>
42 <li><a data-toggle="tab" href="#menu1" style="font-size:22px">Profile </a></li>
43 <li><a data-toggle="tab" href="#menu2" style="font-size:22px">Tutorials</a></li>
44 <li><a data-toggle="tab" href="#menu3" style="font-size:22px">Exams</a></li>
45 <li><a data-toggle="tab" href="#menu5" style="font-size:22px">FindJobs</a></li>
46 <li><a data-toggle="tab" href="#menu6" style="font-size:22px">FeedBack</a></li>
47
48 <li style="float:right"><a data-toggle="tab" href="#menu4" style="font-size:22px">Logout</a></li>

```

```

1  <?php
2  include ("class/users.php");
3  $qus=new users;
4
5  $cat=$_POST['cat']; //The $_POST variable is an array of variable names and values sent by the HTTP POST method.
6  // The $_POST variable is used to collect values from a form with method="post".
7  $qus->qus_show($cat); //creating object of users class and store in variable qus
8  $_SESSION['cat']=$cat; // store cat id in session
9  //echo "<pre>";
10 // print_r($qus->qus);
11
12
13
14 ?>
15
16 <!DOCTYPE html>
17 <html>
18 <head>
19 <meta name="viewport" content="width=device-width, initial-scale=1">
20 <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
21 <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"></script>
22 <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
23
24 <script type="text/javascript"> <!-- java script function for time out functionality -->
25 function timeout(){ // declaring function to caculating time and show it.
26
27     var minute =Math.floor(timeLeft/20); // builtin java script for download integer value and aexact value.
28     var second =timeLeft%60; // coverting munite into second
29     if(timeLeft<=0){ // if timeleft 0
30
31         clearTimeout(tm); // stop function when value 0
32         document.getElementById("form1").submit(); // automatically submit form when time =0.
33
34     } else {

```

```

1 <?php
2 session_start();
3 class users{ // name of the class is users
4     public $host="localhost"; // takes variable for host
5     public $username="root"; //user name by default root for localhost
6     public $pass=""; // password is null by default for localhost
7     public $db_name="online_exam_learning"; // database name for this website is online_exam_learning in php my admin
8     public $conn;
9     public $data; // variable for store data user profile function.
10    public $cat; // variable for store questions.
11    public $qus;// variable for store questions.
12
13    public function __construct() // making to automatic call class when object will be created
14    {
15        $this->conn=new mysqli($this->host,$this->username,$this->pass,$this->db_name); //MySQLi functions allows us to access MySQL database se
16        if($this->conn->connect_errno) // $this is a pseudo-variable which is a reference to the cu
17        {
18            die ("database connection failed".$this->conn->connect_errno); // connect_errno Returns the error description from the last connectio
19        } // die is used to print message and exit from the current php scrip
20    }
21
22    public function signup($data) //function for signup
23    {
24        $this->conn->query($data); // running query function
25        return true;
26    }
27
28    public function signin($email,$pass) // signin function for log in
29    {
30        $query=$this->conn->query("select email,pass from signup where email='$email' and pass='$pass'"); //run select query for checking email ar
31
32        $query->fetch_array(MYSQLI_ASSOC); //The fetch_array() / mysqli_fetch_array() function fetches a result row as an associative array / a n
33        // MYSQLI_ASSOC = Array items will use the column name as an index key.
34        if($query->num_rows>0) // return the number of rows in the result set from the database. return should be greter then 0.

```

```

1 <?php
2 extract($_POST);
3 include "../class/users.php"; // include user class in add_quiz.php file
4 $quiz=new users; // creating object of users class
5 $qus=htmlentities($qus); //The htmlentities function in PHP is used to convert characters into correspondi
6 $option1=htmlentities($op1); // storing option 1 and convert it into html entities.
7 $option2=htmlentities($op2);
8 $option3=htmlentities($op3);
9 $option4=htmlentities($op4);
10 $array=[$option1,$option2,$option3,$option4]; // keep 4 options in a array variable and to match answer with 4 o
11 $answer=array_search($ans,$array); // The array_search() function search an array for a value and returns the k
12 $query="insert into questions values ('','$qus','$option1','$option2','$option3','$option4','$answer','$cat')";
13 if($quiz->add_quiz($query))
14 {
15     $quiz->url("home.php?msg=run"); // if quiz add successfully show a message dada insert successfully .
16     //echo "data insert successfully";
17 }

```