Computer based examination scheduler

Final Year Project

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Plagiarism Free Certificate

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Project Report

[Title of Project]

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
	1.0		<Original Draft>	
			<Changes Based on Feedback from Supervisor>	
			<Changes Based on Feedback From Faculty>	
			<Added Project Plan>	
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APPROVAL

PROJECT SUPERVISOR

Comments: _____

_____

Name:_____

Date:_____ Signature:_____

PROJECT MANAGER

Comments: _____

_____

Date:_____ Signature:_____

HEAD OF THE DEPARTMENT

Comments: _____

_____

Date:_____ Signature:_____

Dedication

We dedicate this project to God Almighty my creator, my strong pillar, my source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this program and on His wings only have we soared. we also dedicate this work to my teacher; Miss Maryam who has encouraged me all the way and whose encouragement has made sure that we give it all it takes to finish that which we have started. To my friends who have been affected in every way possible by this quest. Thank you. God bless you.

Acknowledgements

The praise for God. Then We would like to express my deepest gratitude to our supervisor Miss Maryam, for his continuous support &guidance throughout our academic study. Lastly but not least, we thank our family for their supporting and encouragement. To them we express my love & affection.

Executive Summary

The information system is an examination system that delivers questions set by the Instructor to the student; generates and send the report of the results of students who take the examination via an Email and SMS platform. Challenges including examination malpractices, delay or postponements of assessments due to maintenance processes, and regular subscription of internet data access by students will be eliminated following the adoption of this system. The cost implication of conducting a mass-driven examination which will incurred extensive internet usage via the existing system will drastically and significantly reduced as there will be no need to access online questions anymore. The system is designed using Object Oriented Analysis and Design and Unified Modelling Language was used to bring the view to real life situation. Top down approach was adopted as the implementation approach for this project research. This involves breaking complex system into subsystems and then into modules for easy study and understanding. The system architecture is basically divided into three basic parts. The first is the front end that shows the user interface designed with PHP, HTML and JavaScript, the back end which hold the database server and different tables, at the middle is the internet Information Service or application server using the Apache server; which provides the connectivity between the front end and the back end. The user interfaces are interactive and provisions are made for security of data stored. The use of the system is relatively simple and the I.T knowledge requirement for its usage is relatively minimal.

Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

Chapter 1: Introduction

This document includes detailed information on priorities, scope constraint, process model, primary criteria, team growth, possible project risks, project, schedule finally monitoring and reporting mechanisms. Computer-based online examination system is very useful for Educational Institute to plan an test, safe the time it takes to check the paper and plan mark sheets. It will help the Institute test students and develop their competencies. However the drawbacks of this scheme, when you first prepare the exam for use it takes a lot of times. And we need as many computers for the same number of students. Effective use of "computer-based online examination system," any Educational Institute or Training Centers can be used to develop their strategies to complete the examinations, and in less time to achieve better results.

Our examination system are note online exam system. But our project to computer based online exam system. As there are many schools, colleges, and universities are which are taking exams according to old methods or in other words hand written exams. Our system will be favorable for both students and institutes as it will provide flexibility in timing for the students and for institute benefits the papers will be checked by the system and result will be uploaded automatically.

1.1. Background

Computer Based Exam (CBES) have a number of critical preference compared to conventional paper based exams (PBE) such as productivity, quick scoring and input within the case of multiple choice question exams. Besides, CBE permit more inventive and authentic appraisals due to more progressed innovative capacities. Examples are the utilize of video clips and slide appears to survey medical students in surgery or the utilize of computer based case simulations to survey social abilities. In any case, there are moreover disadvantage when administrating CBE such as the extra require for satisfactory facilities, test security, back up methods in case of technology disappointment, and time for staff and students to induce familiar with modern technology. It is mostly recognize the examinations decide the degree to which educational goals have been accomplished as well as the degree to which educational institution have served the wants of community and society (Shah, 2002). Examinations aren't limited to live educational or societal objectives and wishes but incorporated during a way of dealing with the educational system (Havens, 2002). Rehmani (2003) briefly described that 'examinations play an enormous role in determining what goes within the classroom in terms of what, and the way teachers teach and students learn and may have impact on both teaching and learning'. Wikipedia are used the alternative terms of assessment test or examinations and defined it as: 'test or an examination (or exam) is an assessment indeed to live a test-takers knowledge, skill, physical, fitness and classification in many other topics'.

1.2. Motivations and Challenges

The challenges faced with International Training Certifications is that the organizations that issues this certificates adopts a medium whereby its various Training Centers spread across the globe, subjects their trainees to a

centralized online examinations platform; in which the performances of the trainees in these centers can be tracked and monitored. For that reason, the Training Centers are mandated to provide internet access to the students which lead to huge budget for data subscriptions. It has been observed that these Regulatory Bodies, do carry routine maintenance on their online examination platform which may sometimes lead to up twelve hours downtime; prompting the Training centers to reschedule their examinations to a later date leading to the discouragement of students who have extensively prepared for the exam. Also, most of These Online Training Exams contain recycled questions that have been made available in various websites – prompting to a high level of malpractices.

1.3. Goals and Objectives

The objective of this project is to design and deploy computer based examination system with Multi-factor authentication and message notice features.

Objectives

1. Provide a friendly, easy to use examination platform for students.

2. Reduce the level of examination malpractices and improve the credibility of the Examinations via multi-factor authentication and randomization of exams questions.

3. Provide a real-time processing of results with notifications via SMS and E-Mail at the end of the examination session.

1.4. Literature Review/Existing Solutions

There is a growing work focused on finding better ways to handle systems for exams and e- learning. Some of these researches concentrated on various aspects of the program, including: Schramm (2008) looked at web-based e-learning framework that could simply give and rate infinite endurance mathematical questions. The ability to input and output mathematical formulas, the dynamic generation of plots and the generation of random expressions and numbers are therefore required.Al-Bayati and Hussein (2008) present a 9 implemented standardized software package with various forms of e-exam package; this e-exam package is targeted to people with hearing loss (HI).

The examination material of this package is thus translated into the language of HI persons, such as sign language and finger spelling. The idea of the Generic software is to present the teacher with an empty template that would like to develop his required e-exam for the necessary topic (mathematics, language, science, etc.) and the desired set of test types (multiple choices, matching words, filling in blanks, etc.).
[1]Another paper web-based online review framework suggested (Rashid et al, 2002).

The program conducts test and auto-grading for exams for students. The program promotes the success of tests, the selection of responses, the auto-marking of the submissions and the reaction of test results. It assists in all kinds of questions. It has been used over the Internet and is therefore suitable for both local and remote analysis. The program may assist lecturers, professors, teachers and those who are willing to construct new examinations or edit existing ones, as well as students taking part in the examinations. The framework was developed using different open source technologies, in which PHP, HTML and MYSQL are used this system. A framework for auto-grading was extended to allow for various types of exams and questions. The device was tested in the quality control center of the University of Mansoura.

The test proved the validity of using this type of web-based systems to assess students with high student levels in institutions. There is a growing work focused on finding better ways to handle systems for e-exams and e-learning. Some of these researches concentrated on various aspects of the program, including: Schramm (2008) looked at web-based e-learning framework that could simply give and rate infinite endurance mathematical questions. The ability to input and output mathematical formulas, the dynamic generation of plots and the generation of random expressions and numbers are therefore required.

Al-Bayati and Hussein (2008) present various forms of e-exam package implemented standardized software; this e-exam package is geared towards people with hearing impairments (HI).
The examination material of this package is thus translated into the language of HI persons, such as sign language and finger spelling. The purpose of the Generic program is to provide an empty prototype to the teacher who wishes to create his appropriate e-exam for the correct subject (mathematics, language, science, etc.) and the desired set of types of exams (multiple choices, matching between words, fill in blanketed.).

An important approach for testing mass education is the Web-based Assessment Program (Zhenming et al, 2003). They developed a novel online screening system based on a browser / server framework that performs screening and self-grading for critical issues and operating issues such as programming, Microsoft Windows service, Microsoft Word writing, Excel and PowerPoint, etc.

This has been widely extended to the distance evaluation of basic computer science operating skills, such as the University computer skills course and the national high school graduation test in Zhejiang Province , China. Another paper (He, 2006) introduces a web-based educational assessment method by applying Bloom's taxonomy in real time to assess student learning outcomes and teacher instructional practices. The success of the program is very promising with
two local high schools experimenting with science and mathematics courses. Another paper proposed online review system based on the internet (Rashid et al., 2002).
The program conducts test and auto-grading for exams for students. The program promotes the success of tests, the selection of responses, the auto-marking of the submissions and the creation of test results. It assists in all kinds of questions. It has been used over the Internet and is therefore suitable for both local and remote analysis. The program may assist lecturers, professors, teachers and those who are willing to construct new examinations or edit existing ones, as well as students taking part in the examinations. The framework was developed using various AJAX, PHP, HTML and MYSQL open source technologies in this system. There was a generic auto-grading module to allow various types of exams and questions.
The device was tested in the quality control center of the university of Mansoura. The study showed the feasibility of using this form of web-based systems to assess students in institutions with high student levels. An online website for tutoring and e-examining economic course aimed at introducing a new software method can be used for online review and tutorial implementation of the economic course syllabus (EL Emary and Al Sondos, 2006). Furthermore, among the paper 's key interests is to create a program through which we ensure students have learned all economics concepts. The second component is an online test using a broad database of questions from which the student performance can be automatically measured and some statistical assessments can be obtained. The program built
provides the following functionalities:

1 Instructors may add any additional questions to increase the size of the Question Bank.
2 Different tests can be carried out for each student with randomly selected questions from the Question Bank.
3 Different reports for teachers , pupils, classes ... etc. Will you have it.
4 Multiple students may take their exams simultaneously within and outside their campus without any problem.

1.5. Gap Analysiss

Gap analysis is the comparison of how much of work you were expecting at the present time and how much you have achieved as in our case we have accurately achieved our goal which was to develop a system name computer based examination scheduler which will register students and schedule exams and then collect these exams online .

1.6. Proposed Solution

The offered system is a website that that allows users to take assessment in real time and update the central database. The new system when designed will reduce the problems associated with the existing system. Below are the ways in which this can be achieved:

1. There will be an enrolment page and a verification page where student would be able to register and verify their registration by entering two codes i.e. one code sent to their email and the other to their mobile device.

2. Once a student has login into the system, he/she would see list of courses available.

3. Then once the enrolled course is clicked, a list of available exams would be displayed.

4. Before a student attempts to take an assessment, a One-Time Pass code would be entered which is issued by the instructor before the commencement of an exam.

5. Each assessment consists of 20-25 questions containing options A – F, in which the system would randomized the questions for different students.

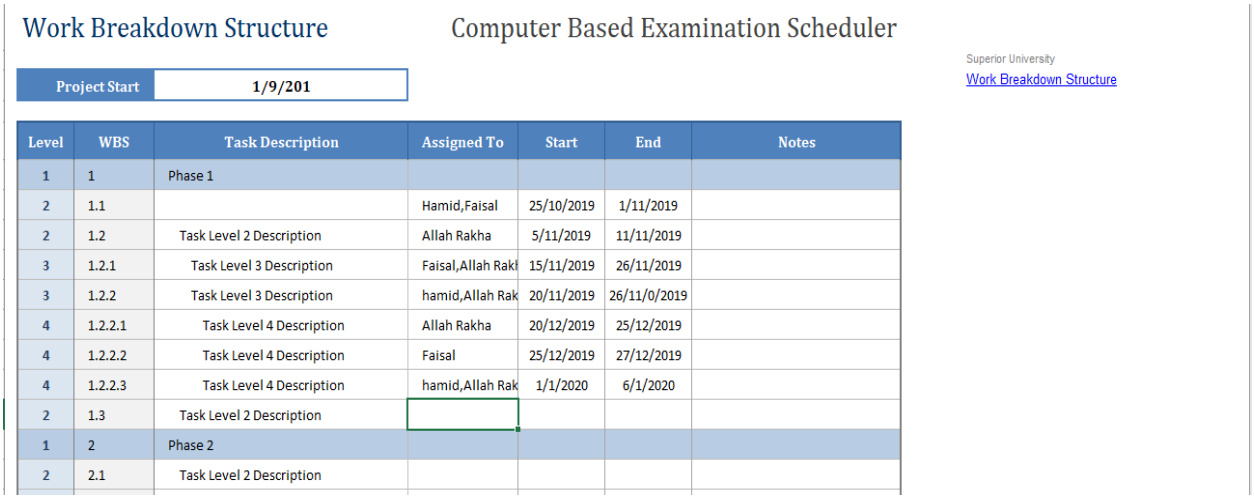
6. At last stage of the assessment, a student would be able to see his/her scores (results) and copies sent to both the student's Email account (Email) and mobile device (SMS) instantly.

7. There would be a resource page where student would be able to access and download materials like E-books, relevant Software etc.

1.7. Project Plan

We are going to use agile method to develop our system as in future we can introduce some new features in our system then it will support the system and in project plan two thing are very important. First is Work Breakdown Structure and second is Gantt Chart. So that is why we have completely discuss these two points in the below.

1.7.1. Work Breakdown Structure



Work Breakdown Structure Computer Based Examination Scheduler

Superior University
Work Breakdown Structure

Project Start	1/9/201

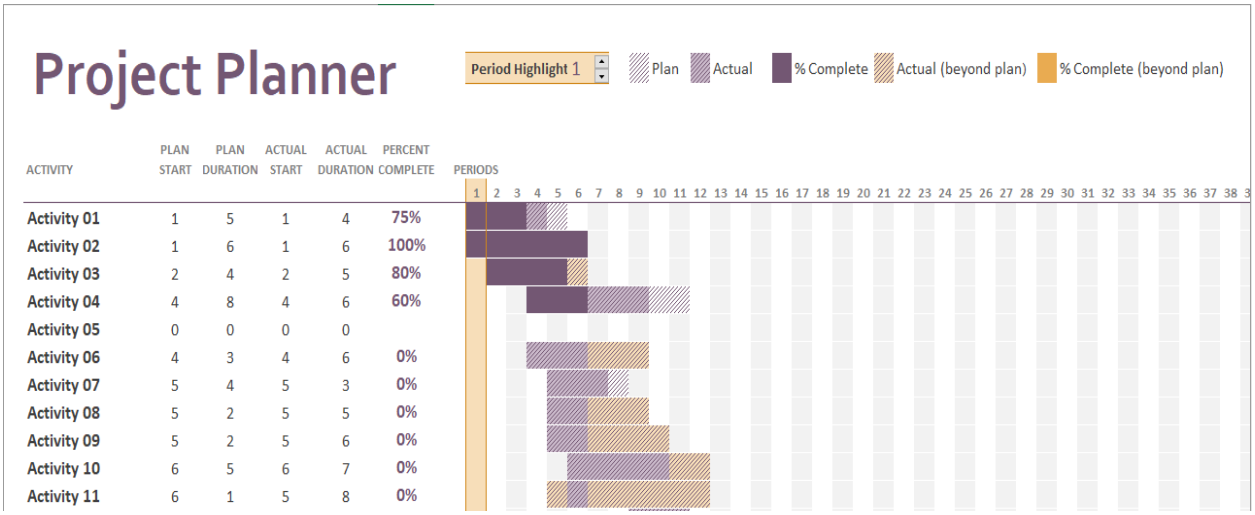
Level	WBS	Task Description	Assigned To	Start	End	Notes
1	1	Phase 1				
2	1.1		Hamid,Faisal	25/10/2019	1/11/2019	
2	1.2	Task Level 2 Description	Allah Rakha	5/11/2019	11/11/2019	
3	1.2.1	Task Level 3 Description	Faisal,Allah Rakl	15/11/2019	26/11/2019	
3	1.2.2	Task Level 3 Description	hamid,Allah Rak	20/11/2019	26/11/0/2019	
4	1.2.2.1	Task Level 4 Description	Allah Rakha	20/12/2019	25/12/2019	
4	1.2.2.2	Task Level 4 Description	Faisal	25/12/2019	27/12/2019	
4	1.2.2.3	Task Level 4 Description	hamid,Allah Rak	1/1/2020	6/1/2020	
2	1.3	Task Level 2 Description				
1	2	Phase 2				
2	2.1	Task Level 2 Description				

1.7.2. Roles & Responsibility Matrix

The following are given below

- Confirm data correctness
- Appropriate control of the advanced authority
- Reduce physical data record
- Superior effectiveness
- Improved facility
- User friendliness and collaborating
- Less time required

1.7.3. Gantt Chart



1.8. Report Outline

The main Report of this project is to develop a computer based examination scheduler which is definitely to accessible the institute students. This technique reduces the manual work and provides the right security. This proposed system tries to eliminate or reduce difficulties up to some extent. This technique will help the user to scale back the workload and mental conflict. It helps the user to figure user friendly and he can easily do his jobs without time consuming.

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

Our purposed project will cover a wide area of educational institutions. As there are many schools, colleges, and universities are which are taking exams according to old methods or in other words hand written exams. Our system will be favorable for both students and institutes as it will provide flexibility in timing for the students and for institute benefits, the papers will be checked by the system and result will be uploaded automatically. Hence this system can be deployed in educational institutes which is a huge field .And there will be no restriction for the students to be present on the time of examination.

2.1.2. Document Conventions

2.1.3. Document Conventions

The aims of Computer based examination scheduler are not currently strictly defined. Numbers of the requirement specifications and use cases provided in the this document are merely a starting point and will give a point of view for the planning purpose of this project. The details related to the software systems and interfaces are included in this document in detail. With respect to information and sources will be given within the reference sections at the conclusion of the document.

2.1.4. Intended Audience and Reading Suggestions

The Application Requirements file is intended for:

Developers who can analysis project's proficiencies and more simply recognize where their efforts can be used to improve or add more structures there to.

Testing experts who can use the system as a foundation for his or her testing approach, as there are some errors, which are easy to find out and to check out employing a requests file. This type of method testing becomes more systematically structured.

2.1.5. Product Scope

As there are many schools, colleges, and universities are which are taking exams according to old methods or in other words hand written exams. Our system will be favorable for both students and institutes as it will provide flexibility in timing for the students and for institute benefits, the papers will be checked by the system and result will be uploaded automatically. Hence this system can be deployed in educational institutes which is a huge field. Moreover, there will be no restriction for the students to be present on the time of examination.

2.1.6. References

1- Project will be developed in php. Source code and other project files will be available for download

2- Computer base examination scheduler Software Requirement Specifications document.

2.2. Overall Description

2.2.1. Product Perspective

Function

- Login for Students, Teachers and Main-Admin.
- Students and Teachers registration.
- Take exam and quiz.
- Upload results of student exam.
- Feedback registration.

It consist of three main modules:

1. Students
2. Teachers
3. Admin

2.2.2. Student Module

In this section, the student will register with correct data (where username and E- mail id should be distinctive for everybody).Once student registered than he/she can login through this system and perform all functions. when student take the quiz he has to click the attempt quiz button. Students can also visit their earlier records. Here student can take the different sort of quizes. cookies are applied on this method. Therefore, once user logout then cannot re attempt, he must

login into the system . When user logout, cookies will also deleted. Complete sequence of Student and all the functionalities listed below:

Home page

Click login button

Provide login details

Perform desired tasks

New User

- User Name
- Email
- Password
- Confirm Password

2.2.3Teacher Module

In this section, the teacher will login into the system with valid email and password registered by Admin. Once teacher will login, teacher can see the assignments which were submitted by students. Teacher cannot modify his personal information. A teacher can visit the feedback or quires posted by the students. Cookies are applied on this procedure. Therefore, once teacher logout from the system, he should need to login again.

Teacher

- Login
- Email and Password
- Perform the tasks.

2.2.4 Admin Module

This modules helps the admin, to register students and teacher with appropriate data.in this module the admin will assign email accounts to teachers and students. admin can update student and teacher information. Cookies are applied here hence once admin logout then he has to login again

Admin

- Login.
- Admin Email
- Password.

Add Students and Teachers

- Admin can add students and teachers using this functionality.

Edit/Update students and teacher

- Admin can edit/update students and teachers using this functionality

2.2.2. User Classes and Characteristics

1. Admin

Admin characteristics are add the teachers and enrolled the students. Admin are see view all students records and teacher records.

2. Teacher

Teacher characteristics are view all students , prepare exam, upload the results and check the students papers.

3. Student

Student characteristics are take exam, view result, attempt quiz and see our result percentage.

3.1.1. Operating Environment

The program source code is deployed on Windows Operating System. The web service code and the database is deployed on XAMMP, which contains both Apache server and MySQL relational database server.

3.1.2. Design and Implementation Constraints

Implementation Constraints

My SQL Server

For effective function of the system; at least 4gb of RAM is compulsory at Server Side The machine isn't multi-lingual.

Single admin control provided; not distributed

For full functioning computer based examination, scheduler needs Internet Connection.

3.1.3. User Documentation

Following the designing the user interfaces are below.

The interface of all the forms will be going to very clear and really interactive to the user. When the user open the exam system the welcome window will appear. Within the login window the user can simply enter the unique password and id. Then it'll will give the successfully login message on screen. From each window the user can easily attend any desired window that is there will be complete and comparative linking. There'll be a correct pool of GUI interface, which can provide better look and feel. Within the screen layout the background color is exceptionally light and therefor the graphics and font style are going to be in proper manner and well prepared. In every window there'll be alert, confirm etc. message box for displaying message.

3.1.4. Assumptions and Dependencies

These will be the assumptions and dependencies.

1. User have legal email addresses
2. Admin has the right to add/delete all types of accounts.
3. Faculty has the right to allow student

3.2. External Interface Requirements

3.2.1. User Interfaces

- The interface of all the forms will be going to very clear and really interactive to the user.
- When the user open the exam system the welcome window will appear. Within the login window the user can simply enter the unique password and id.
- Then it will give the successfully login message on screen. From each window, the user can easily attend any desired window that is there will be complete and comparative linking.
- There will be a correct pool of GUI interface, which can provide better look and feel. Within the screen layout, the background color is exceptionally light and therefor the graphics and font style are going to be in proper manner and well prepared. In every window there will be alert, confirm etc. message box for displaying message.

3.3. System Features

Functional Requirements

OPERATIONS

As the system will run on browser, the subsequent security requirement are going to be fulfilling.

- The system will use session Identifier to spot the user.

- The system are maintains the entire cookie on client side.
- Session are going to be maintain in such how that user cannot log-in for same account indifferent browser at same time.
- The secure connection are going to be used to provide the safety.
- Cookie won't contain any information like user password.
- Cookie also will not contain any confidential data on client side.
- he user password will never display Web browser.
- The system front end will access by the overall user while the back end are going to be access by the administration only.
- For user security, if user forgot password than original password are going to be sent to the User email
- Use case, mode of operation, functional hierarchy, user class, object class or combinations
- Identification, save data, login one account at just one time

Provided Secure Connection due to which password was not save and confidential Front end Access by general use and backend by administrator Use case, Mode of operations, object class, Functional Hierarchy.

- **Stimulus/Response Sequences**

1 Request
2 Redirect
3 Approve authorization
4 Response
5 Request access taken
6 Response access taken
7 Request sharing feed
8 Response sharing feed

User can easily save its data in to the database and update as their need.

- Logical Characteristics interface.
- Sample screen GUI standards.
- Screen Layout Constraints.
- Standard button and function.
- Appear on every screen.
- Error message display standards.
- User interface needed.
- Separate user interface specification.

3.3.2. Hardware Interfaces

Server side hardware

- Hardware suggested by all the software required.
- Communication tools to assist client applications

Client side hardware

- Hardware suggested by particular client's OS and internet browser.
- Communication tools to connect the server.

3.3.3. Software Interfaces

Software Requirements

- Operating System: all
- Database language: php
- User interface: HTML,CSS, and JavaScript
- Connection Specific Software Components
- Database
- Operating System tools
- Libraries and integrated
- Message going out and in
- Services needed and Nature of Communication
- What kind of data shared across?
- Programming interface protocol
- Global data

3.3.4. Communications Interfaces

Protocols required to allow access on the server side

- HTTP arriving request
- HTTPS inward request if secure entrance is executed Subsequent protocols are essential to be allowed on the client side
- HTTP departing request
- HTTPS departing request if secure access is executed
- E-mail
- Relevant message configuring
- Message security or encryption problems
    - Data transmission rate
    - Synchronization Tools

3.4. System Features

Functional Requirements

OPERATIONS

- The system should be following the security requirements, as it will run on browser.
- To identify the user the system will use cookies.
- Cookies will be maintained on client side by the system.
- A user cannot log into a system at a time from different browsers.
- To provide security secure connections will used.
- Data like passwords will not be contained by the sessions.
- Confidential date should not be used by the sessions.

- Password will not displayed by the web browser.
- For security purpose, the user will have access to front end while only the admin can access the back end.
- In case the user forget his password, a confirmation email will be send to his email address.
- Identification, save data, login one account at one time
- Provided Secure Connection due to which password was not save and confidential Front end Access by general use and backend by administrator Use case, Mode of operations, object class, Functional Hierarchy

- **Description and Priority**

Provide a small explanation of the feature and specify whether it is of Great, Average, or Small importance. one could also take in precise importance module ratings, such as advantage, consequence, price, and danger

- **Stimulus/Response Sequences**

✓ Request
✓ Redirect
✓ Approve authorization
✓ Response
✓ Request access taken
✓ Response access taken
✓ Request sharing feed
✓ Response sharing feed

- **Functional Requirements**

In this section we explain the functional requirements of CBES. There will be three sub units in this phase.

1. Administrator
2. Teacher
3. Students

The function of each modules are following

1. **Administrator Module:**

   In this module administrator accumulate all the results after conclusion of successful exams and send into the head of department and when demanded.

2. **Teacher:**
   In this section Teacher module database are loaded and prepared in to the software. Subject- wise selection of examination are done by the faculty. The results will be shown instantly after completion of exams.

3. **Students:**
   The students will login to the system and take his exams. The students can also check their previous exams results and his details. They gets results immediately after completion of the papers.

Features are available in Administrator Module:

1. The administrator can create or delete account.
2. They can view the account.
3. They can change the password of the account.
4. They can insert, remove and corrects the information options are available on CBES.
5. They can access the all accounts of faculty member and students.
6. They can hide the any kind of feature of all users.

Features are available in Examiner Module:

1. They can modify all the results.
2. They can view all the exams collected from the students.
3. They can view all results.
4. They can change their account password.

Features are available in Candidates Modules:

1. They can view their results.
2. They can change their account password.
3. They can view the important or helping material according to the exams.
4. They can access the various kinds of test in their accounts.
5. They can update their profiles.

3.5. Other Nonfunctional Requirements

3.4.1 Performance Requirements

The system's database is capable of holding a total of 10,000 student records. Multiple users are assisted at a time by the CBES program. The other basic specifications could not have affected system deployments.

3.4.2 Safety Requirements

When the database is crashed at any time because of the virus, the faults are the operating system. Hence it is important to take the database backup.

3.4.3 Security Requirements

Some factors that secure the device for accidental or malicious entry, use, alteration, destruction are bellow in the security requirements

1. We assign the various modules some role.

2. We have tested integrity of the data.

3. To limit contact between certain program areas.

4. In the later software version encryption technique was implemented in the users. When system validates the user, communication needs to be restricted.

3.4.4 Software Quality Attributes

Correctness:

One software system's correctness refers to:

- Agreement with system interface requirements
- Independence of actual software system application.

When embedded in a complex software system, the correctness of a program becomes especially critical.

Reliability:

From: Computer device reliability benefits from:

Correctness

Availability

The behavior over time depends on the reliability of the software system for fulfilling a specified specification.

Reliability:

The reliability of a software system is defined as the probability that this system will fulfill a

Function (determined by the specifications) within a specified time interval for a specified

Number of input tests under specified input conditions (assuming hardware and input are

error-free).

Learnability:

Getting to know a software program depends on:

- User interface architecture
- The user instructions (tutorial or user manual) are clear and simple.

The user interface will present information as near as possible to fact and allow for productive Usage of device malfunctions.

Robustness:

Robustness eliminates the effect of operating errors, defective input data and hardware error.

Maintainability:

Maintainability = suitability for debugging (localsation and error correction) and feature adjustment and extension.

A software system's maintainability depends on its:

Readability

Extensibility
Testability

Readability:

A software system's readability depends upon its:

- Style of programming
- Consistency
- Readability of programming languages for implementation
- System composition
- Documentation quality
- Inspection tools available

3.5 Other Requirements

1. Access security:

To what degree the system is safeguarded from internal and external influences against intentional and disruptive faults.

1 Accessibility:

The degree to which people with the widest range of skills may use the software system to accomplish a specified function in a given context of use.

2 Confidentiality:

The degree to which the software system safeguards confidential data and only allows appropriate access to data.

3 Efficiency:

To what degree the software system manages the throughput capacity and response time.

4 Reliability:

To what extent the software system executes the specified functions consistently without fail.

5 Usability:

The ease, with which the user knows, performs, prepares inputs and interprets outputs by machine interaction.

6 Flexibility:

The ease with which to adjust the program to match various settings, configurations and user expectations.

7 Modifiability:

To what extent changes to a software system can be efficiently and cost-effectively developed and deployed.

Chapter 3

Use Case Analysis

Chapter 3: System Analysis

The offered system is a website application that that allows customer to get assessment in real time and update the central database. The new system when designed will reduce the problems associated with the existing system in order to improve the credibility of the Training Module. Below are the ways in which this can be achieved:

1. There will be an enrolment page and a verification page where student would be able to register and verify their registration by entering two (2) codes i.e. one code sent to their email and the other to their mobile device.

2. Once a student has login into the system, he/she would see list of courses available.

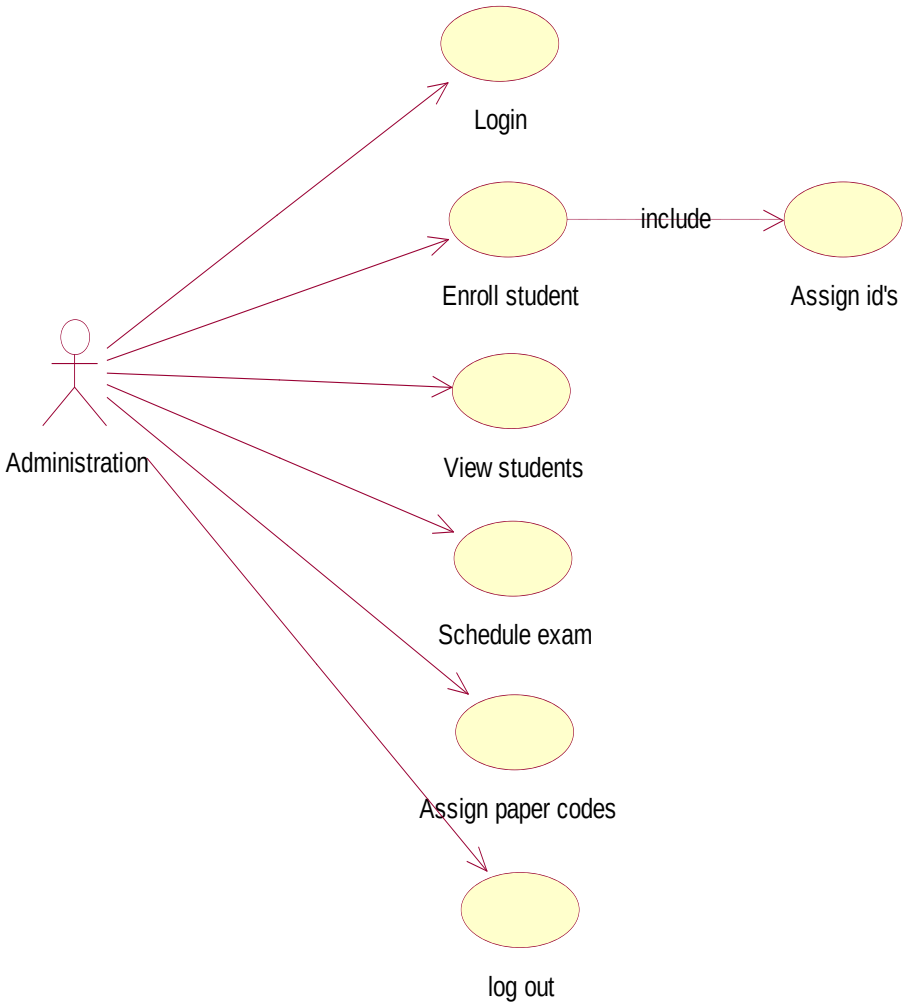
3. Then once the enrolled course is clicked, a list of available exams would be displayed.

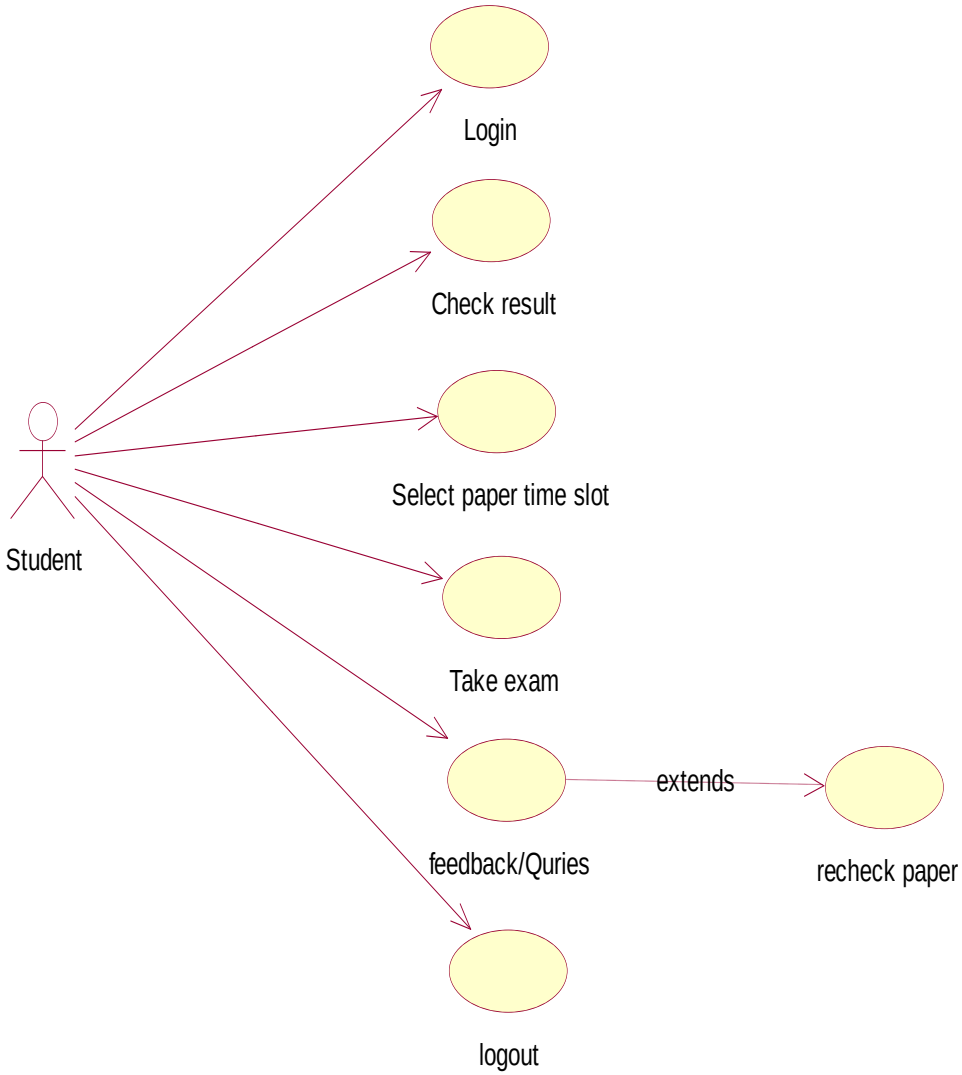
4. Before a student attempts to take an assessment, a One-Time Passcode would be entered which is issued by the instructor before the commencement of an exams.

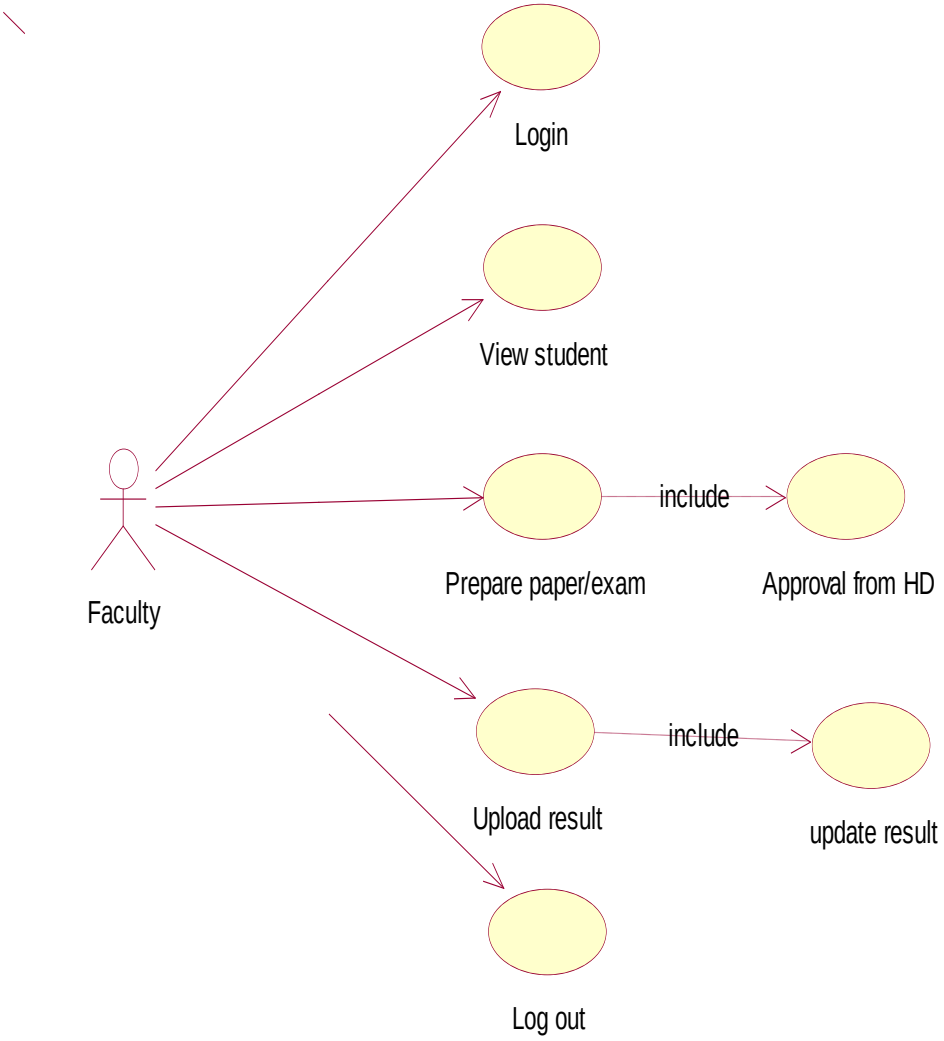
5. Each assessment consists of 20-25 questions containing options A – F, in which the system would randomized the questions for different students.

6. At the last stage of the assessment, a student could see his/her results and copies sent to both the student's Email account instantly.

3.1. Use Case Model

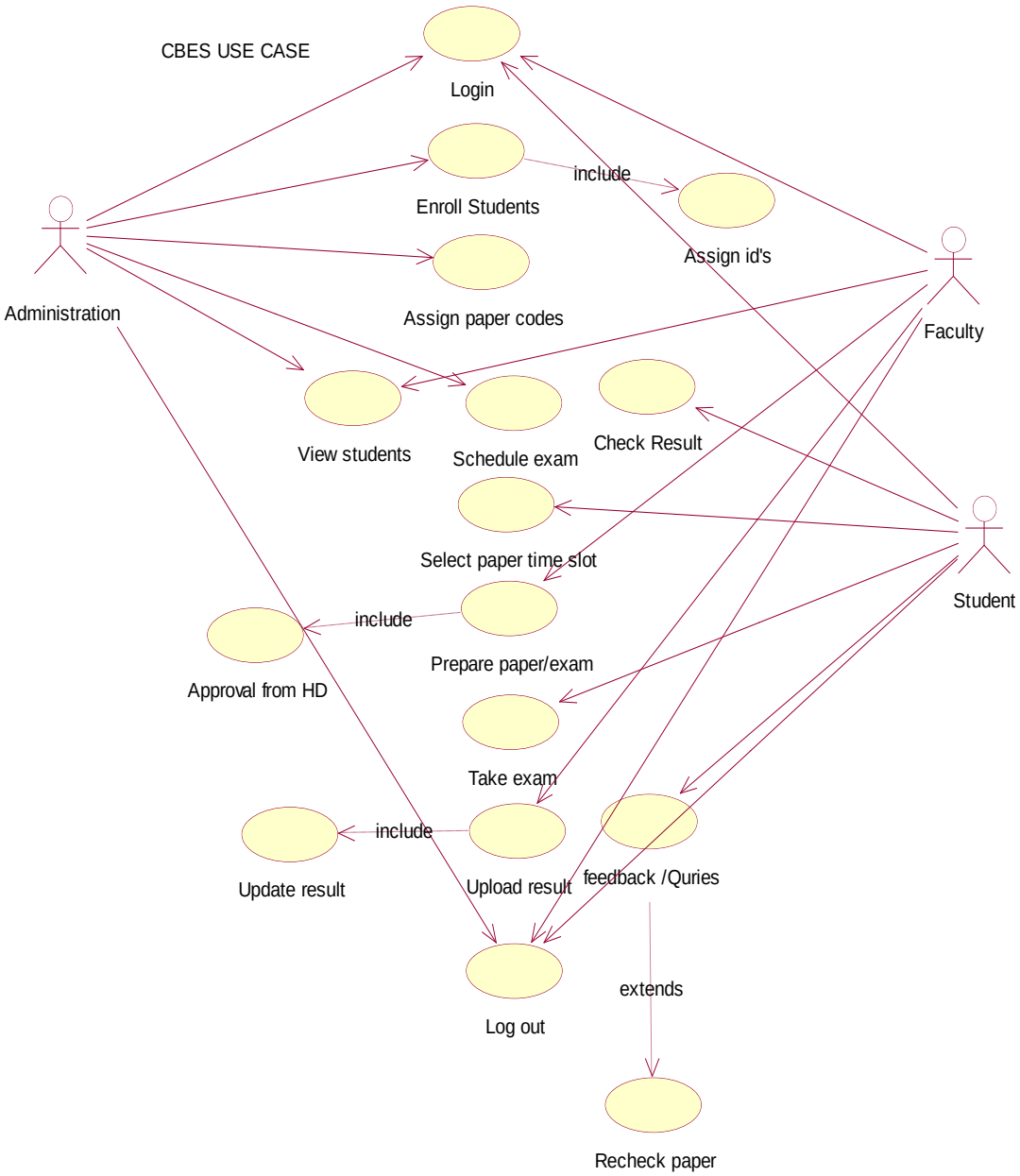



Login
Check result
Select paper time slot
Student
Take exam
extends
feedback/Quries
recheck paper
logout


Login
View student
Faculty
Prepare paper/exam
include
Approval from HD
Upload result
include
update result
Log out

3.2. Use Case Details

3.2.1 Fully Dressed Use- Cases



3.1. Use Case Specification

4. Fully Dressed Use Case

ID	UC-1
Title	Registration
Description	User/Student access the system and view the required data for him to register then he fill the require data and registered himself
Primary-Actor	User/Student
Pre-condition	Student has to press/click on the registration button
Post-condition	User/Student is registered in the system database
Main Success scenario	1. User/Student have to fill the required data. 2. User/Student click "Login" button. 3. Now system deliver the message to the student's email for authentication.
Extension	1a.If Student leave the some required data , system should display the error message. 1a1.if user put the same email which already registered system should message "Already registered". 2a. Empty fields message 3a. Someone trying to login
Frequency of use	First time just
Status	High
Owner	
Priority	

5.

ID	UC-1

Title	Login
Description	User/Student access the system and view the login page requires username/email and password of the user to get into the system
Primary Actor	User/Student
Pre-condition	User/Student have to press the login button
Post-condition	User/Student after press the login button to get new page
Main Success scenario	1.User/Student login into the system 2. Now system deliver a message to the user 's email for confirmation.
Extension	1a.If Student directly login and not put the email /username and password and system should show the error. 2a.when user put username/email and password then system should display the message "Successfully"
Frequency of use	Many time
Status	High
Owner	
Priority	

6.

7.

ID	UC-1
Title	Home page
Description	A home page displayed to the user/Student with the following options: Slider, Assessment, Books, Exams Schedule, feedback, teachers.
Primary Actor	User/Student
Pre-condition	User/Student have to click on the home page button
Post-condition	User/Student check the assessment detail
Main Success scenario	1. User/Student can check Assessment, Books , Exam Schedule. 2. Now User/Student have to click on the any button and read more details.

Extension	1a.User/Student have to click any button .For example user have click on Exam schedule .All paper slot are available on the app and user check the paper slot spare time then attempt the Paper.
Frequency of use	Many time
Status	High
Owner	
Priority	

8.

ID	UC-1
Title	Slider
Description	slider updated the user/Student about the papers , user/Student can click to see further details about that.
Primary Actor	User/Student
Pre-condition	User/Student have to click on slider button
Post-condition	User/Student can click to see further details about paper.
Main Success scenario	1.It will publish directly from Teacher portal which teacher will check and the marks would confirm by the some other teacher then it will show to the User/Student .User/Student can just read that. 2. User/Student can just read that
Extension	1a.User/Student will see marks and can do comment on it which just teacher will have a right to reply to the user/Student. 2a.User/Student can read easily
Frequency of use	Many time
Status	High
Owner	
Priority	

9.

ID	UC-1
Title	Exam Schedule
Description	User/Student can open “Schedule” Paper list will be displayed with the concerns of the user/Student, User/Student can select Paper free time from list in which paper will easily attempt the at this time.
Primary Actor	User/Student
Pre-condition	User/Student directly open "exam schedule" button
Post-condition	Paper slot would be confirmed by the admin.
Main Success scenario	1.User/Student can paper slot for attempt paper. 2. User/Student can see further details about the Paper and will chose free time from list
Extension	1a.User/Student after selecting can check paper detail like syllabus ,paper pattern etc. 2a.User/Student can select Paper free time from list. 2a1.Then schedule would be confirmed by the teacher.
Frequency of use	Many time
Status	High
Owner	
Priority	

10.

ID	UC-1
Title	Chat
Description	Chat is another option ,User/Student can contact through(chat or video call) with the teacher about any query.
Primary Actor	User/Student
Pre-condition	User/Student open "Chat" button
Post-condition	User/Student chat will help to contact with the teacher by typing Message.

Main Success scenario	1.User/Student wants audio and video call to the teacher. 2.User/Student easily discuss for any query to the teacher. 3.Teacher can reply the Student message
Extension	1a.Teacher can not accept the audio and video call only chat. 2a.User/Student can asked for any query and teacher will return message and talk to the User/Student
Frequency of use	Many time
Status	High
Owner	
Priority	

ID	UC-1
Title	History
Description	History is another option that will be available in menu of a specific user that will show the history of every paper.
Primary Actor	User/student
Pre-condition	User/Student have to click "History" button
Post-condition	User/Student's record will be held that the paper had attemp
Frequency of use	Many time
Status	High

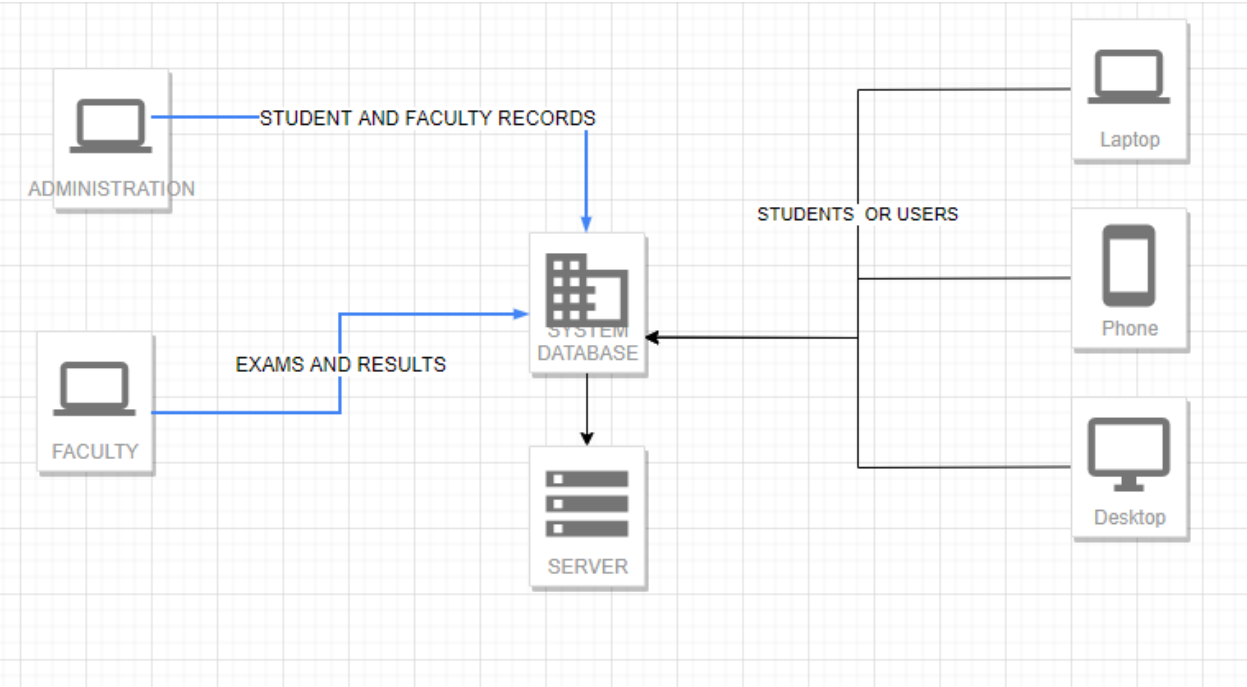
Chapter 4

System Design

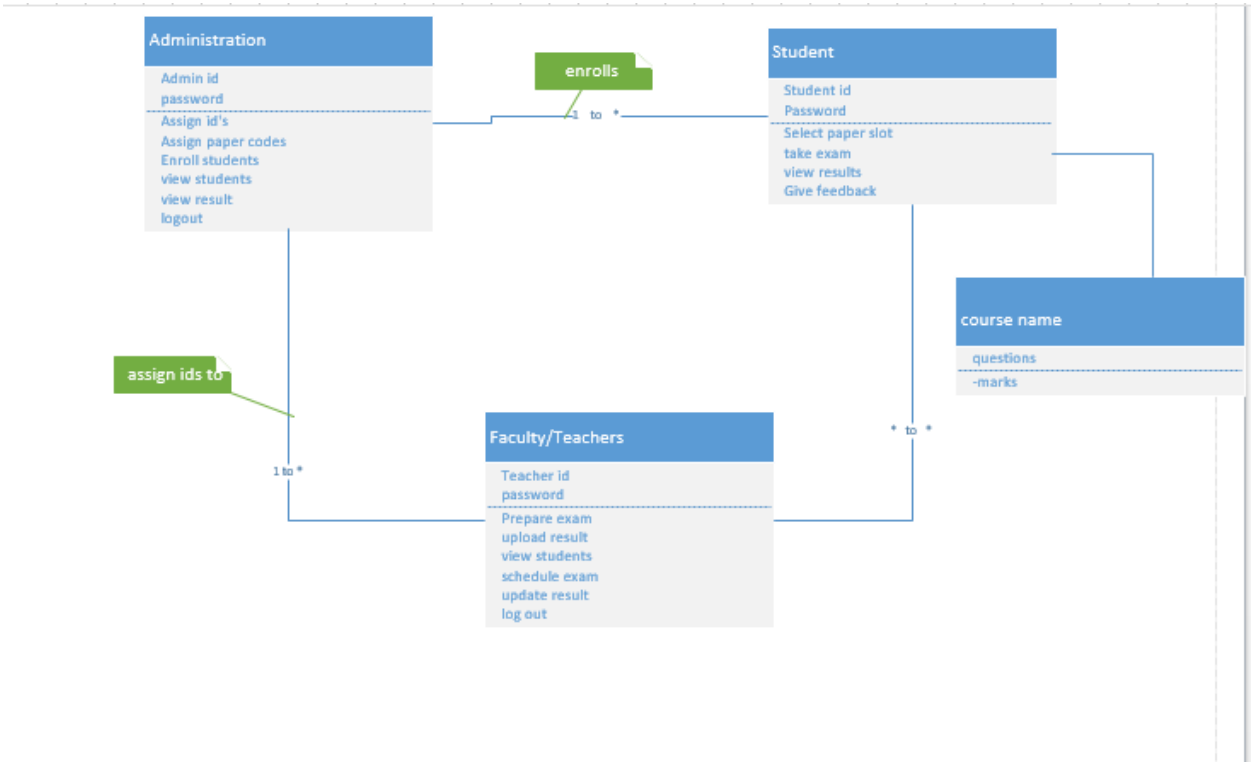
Chapter 4: System Designing

This chapter will cover designing phase of project and we are going to develop a system which will conduct online exams or quizzes from the students a various levels. this will be a website plate-form the students and teachers have to login and then perform their tasks according to the permissions granted to them by the admin

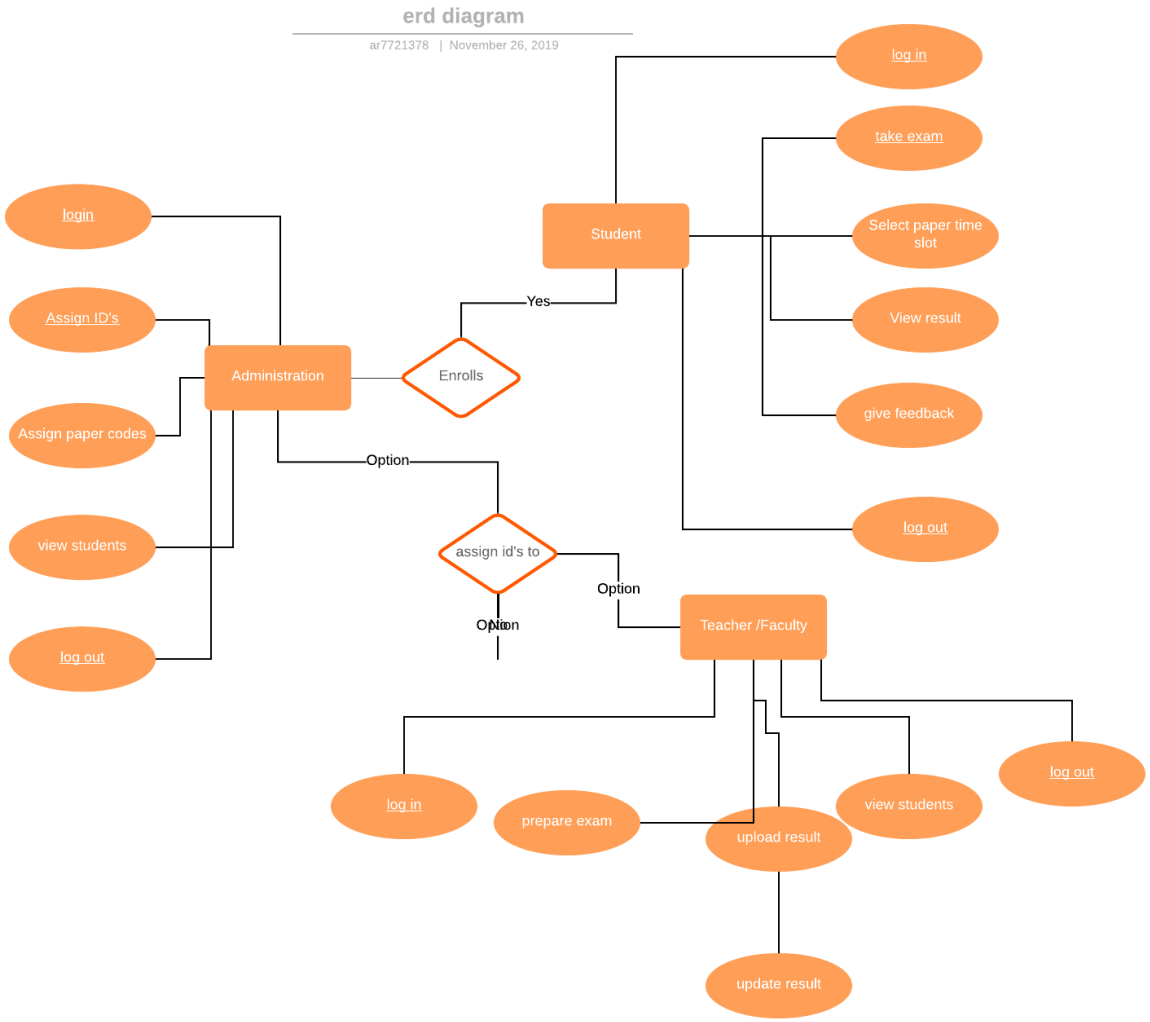
4.1. Architecture Diagram



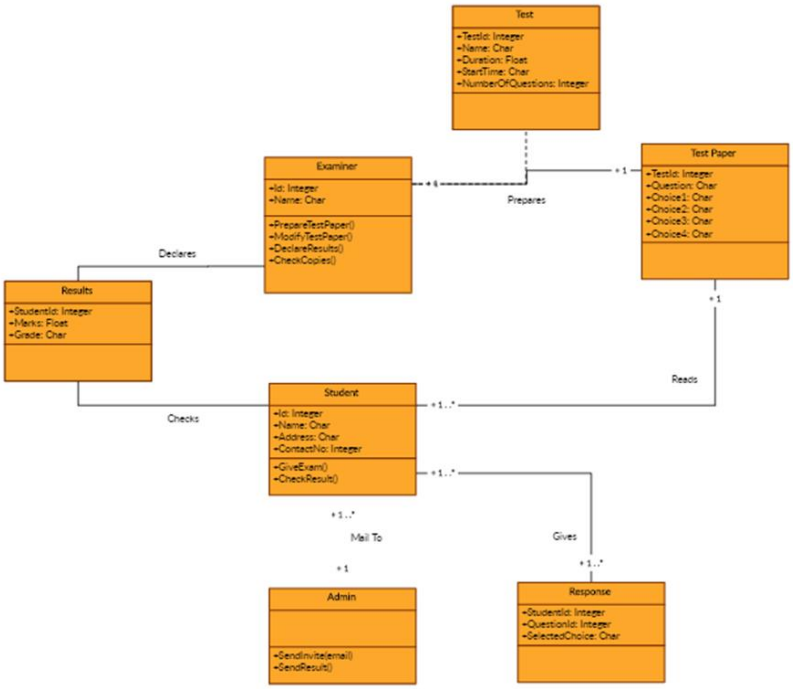
4.2. Domain Model



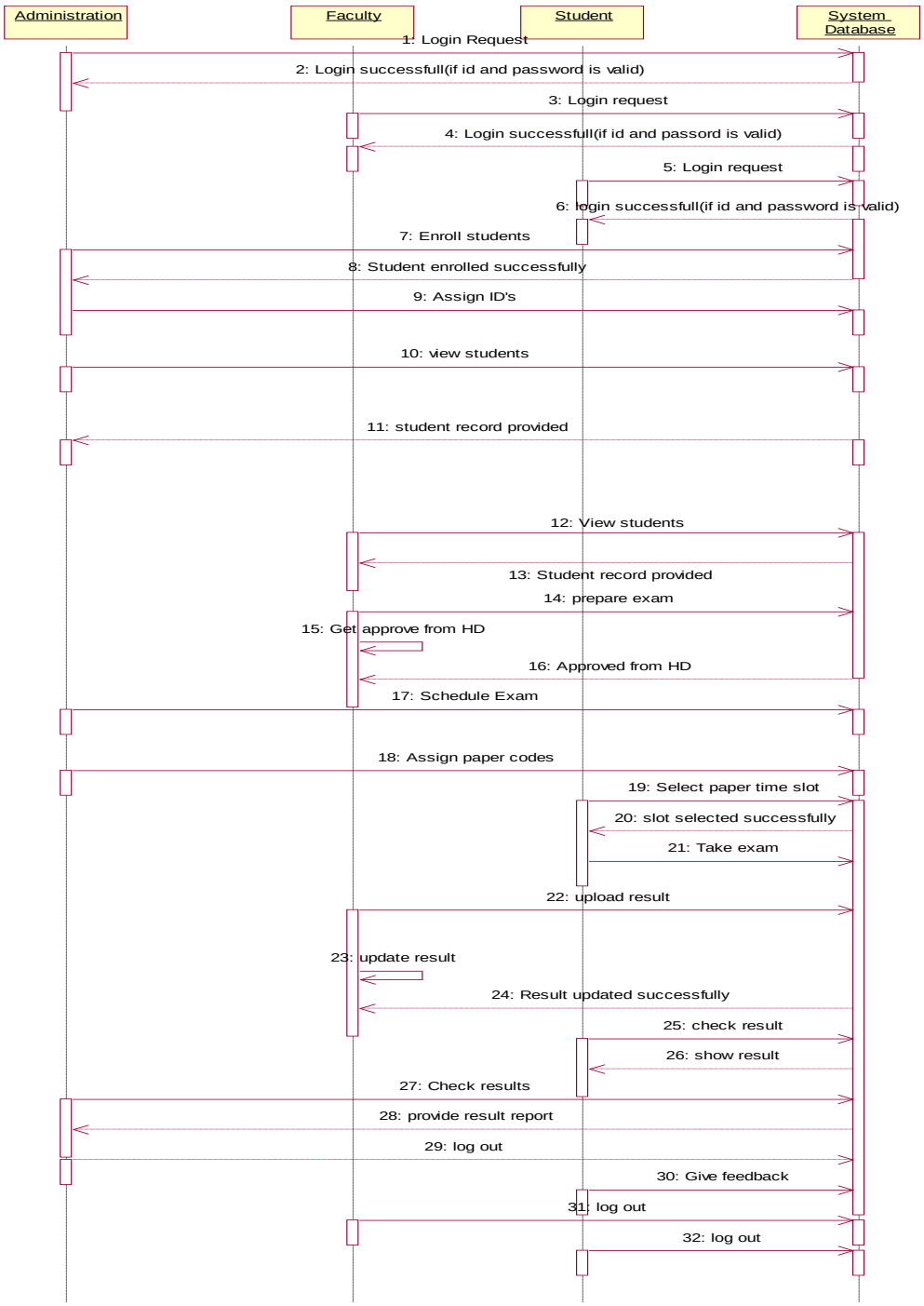
4.3. Entity Relationship Diagram with data dictionary



4.4. Class Diagram



4.5 Sequence / Collaboration Diagram



4.5. Operation contracts

Registration:-

Operation:
Registration_info(First_name,Last_Name,Password,username,password,Repassword,Dob,Email, Address)

Cross operation
Use case: Register
Scenario: Registration
Pre-Condition: None
Post-Condition:
An information instance "i" was created.
"I" was associated with student ,faculty.
Attributes of "i" were initialized

Login:-
Operation: Login info (Username, Password)
Cross operation
Use case: Login
Scenario: Login
Pre-Condition: Registration
Post-Condition:
An information instance "L" was created.
"L" was associated with Student, Faculty and Admin.
Attributes of "L" were initialized

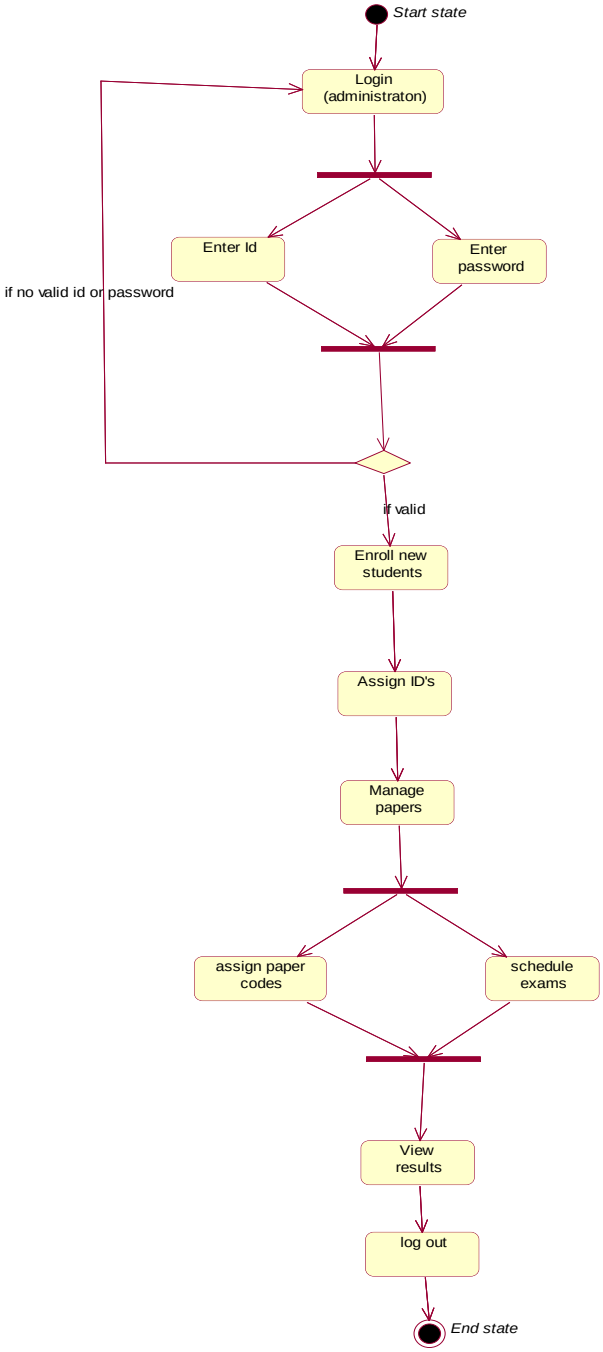
Take Exam:-
Operation: Take exam
Cross operation
Use case: Take exam
Scenario: Take Exam
Pre-Condition: None
Post-Condition:
An information instance "Exam" was created.
"Exam" was associated with Student.
Attributes of "Exam" were initialized
Assign codes:-
Operation: Assign codes
Cross operation

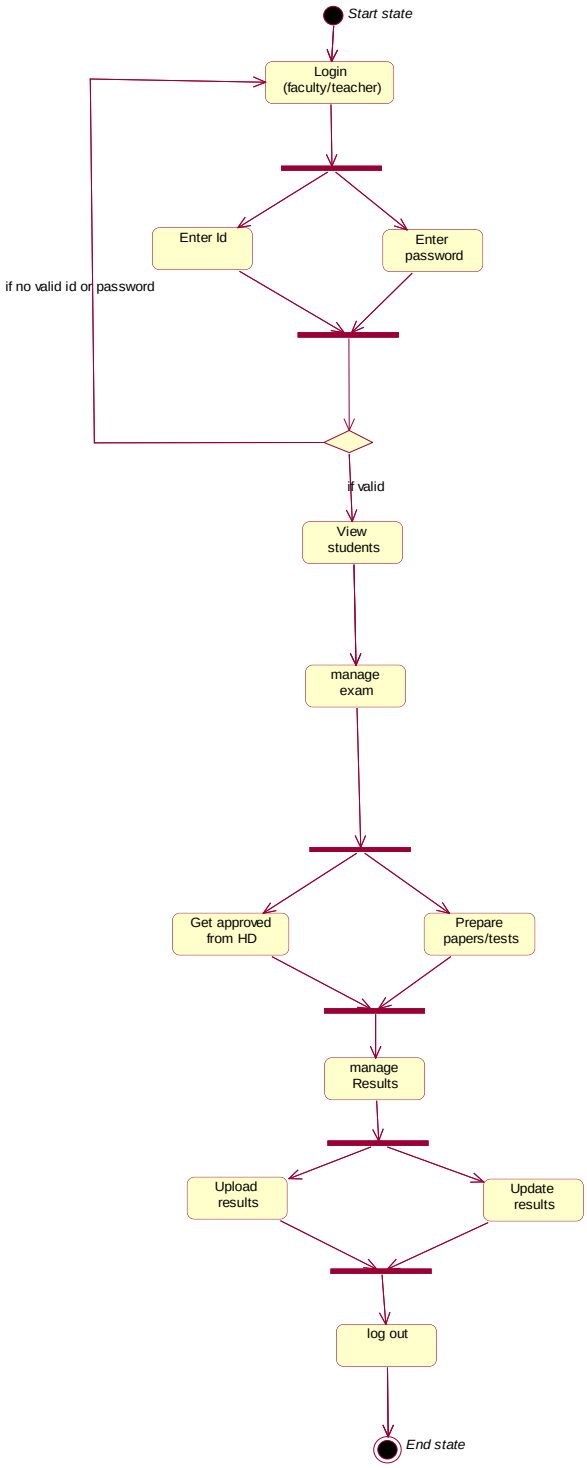
Use case: Assign codes
Scenario: Assign codes
Pre-Condition: None
Post-Condition:
An information instance "Codes" was created.
"Codes" was associated with Admin.
Attributes of "Codes" were initialized

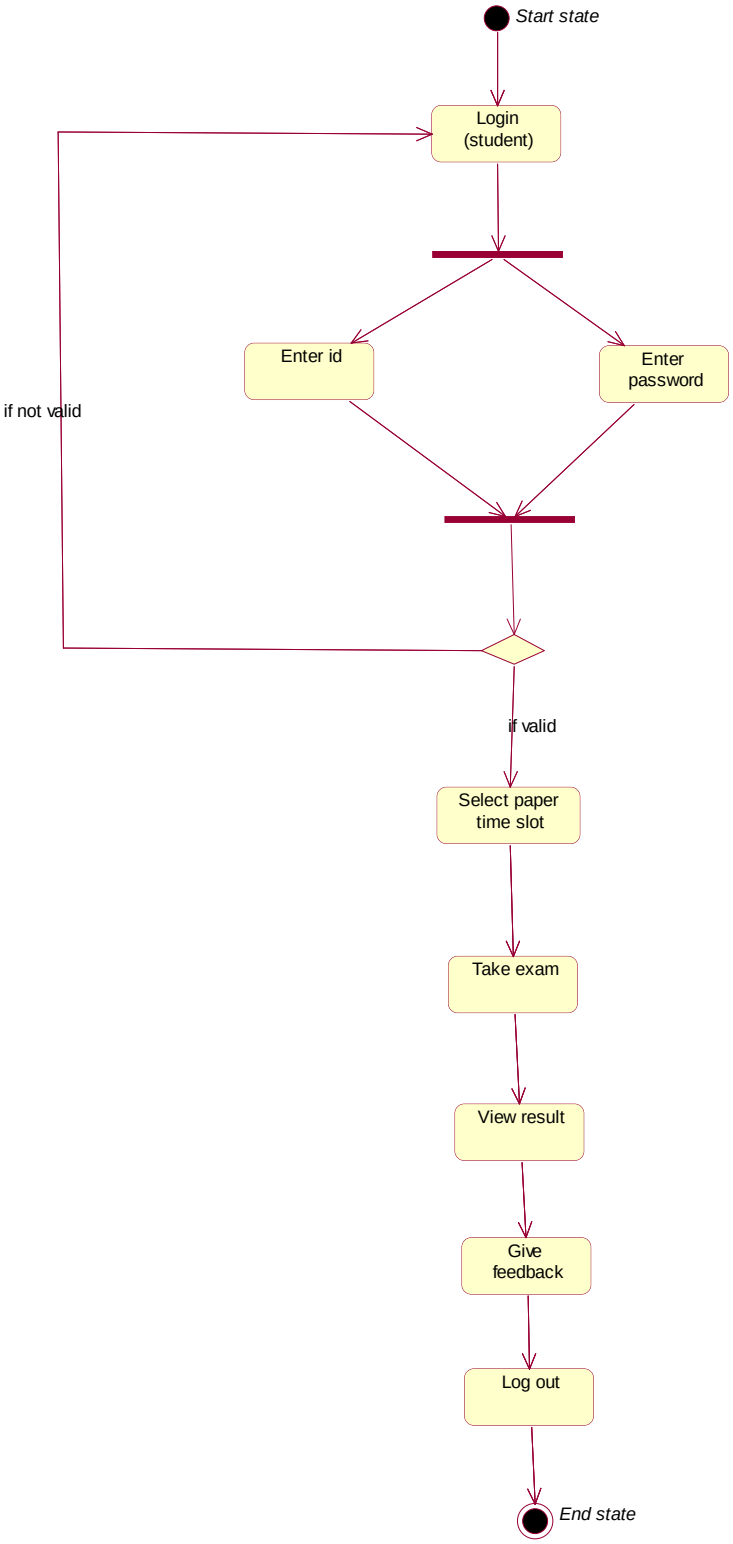
Check Result:-
Operation: Check Result
Cross operation
Use case: Check Result
Scenario: Check Result
Pre-Condition: None
Post-Condition:
An information instance "Check Result" was created.
"Check Result" was associated with Student and Admin.
Attributes of "Check Result" were initialized

Assign ID:-
Operation: Assign id
Cross operation
Use case: Assign id
Scenario: Assign id
Pre-Condition: None
Post-Condition:
An information instance "assign id" was created.
"assign id" was associated with Admin.
Attributes of "assign id" were initialized
Prepare exam:-
Operation: Prepare exam
Cross operation
Use case: Prepare exam
Scenario: Prepare exam
Pre-Condition: None
Post-Condition:
An information instance "Prepare exam" was created.
"Prepare exam" was associated with Teacher or faculty.
Attributes of "Prepare exam" were initialized

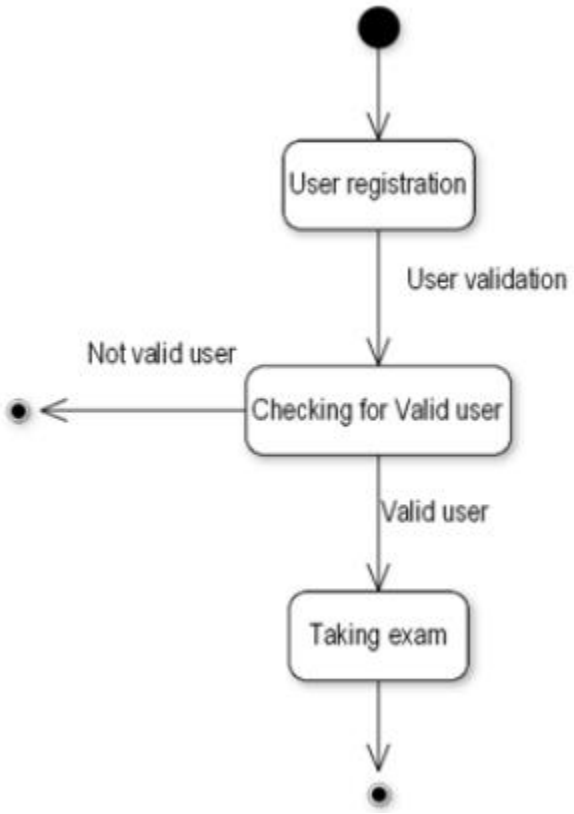
4.6 Activity Diagram


Start state
Login (administraton)
Enter Id
Enter password
if no valid id or password
if valid
Enroll new students
Assign ID's
Manage papers
assign paper codes
schedule exams
View results
log out
End state


Start state
Login
(faculty/teacher)
Enter Id
Enter
password
if no valid id or password
if valid
View
students
manage
exam
Get approved
from HD
Prepare
papers/tests
manage
Results
Upload
results
Update
results
log out
End state

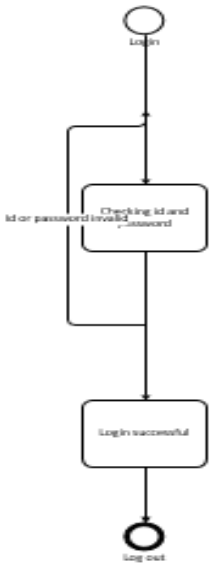

Start state
Login
(student)
Enter id
Enter
password
if not valid
if valid
Select paper
time slot
Take exam
View result
Give
feedback
Log out
End state

4.6. State Transition Diagram

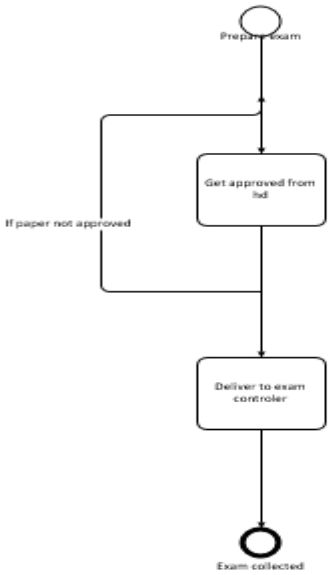


Assign Id:

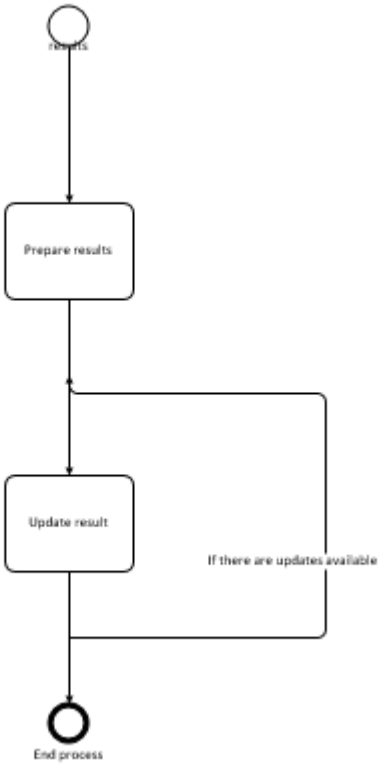
Log In:



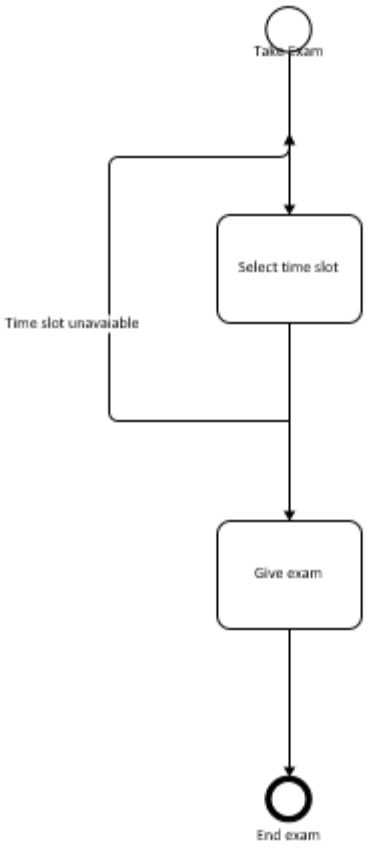
Prepare Exam:



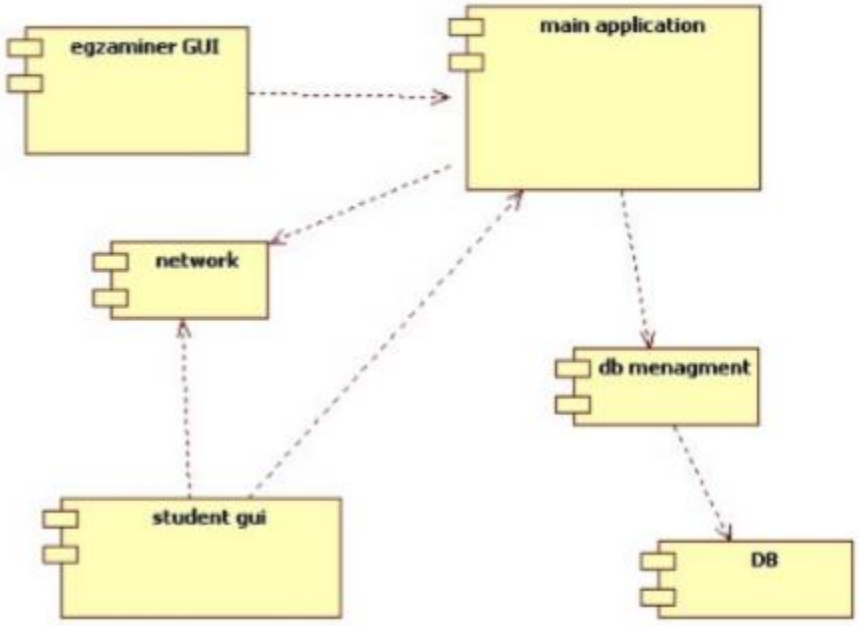
Result:



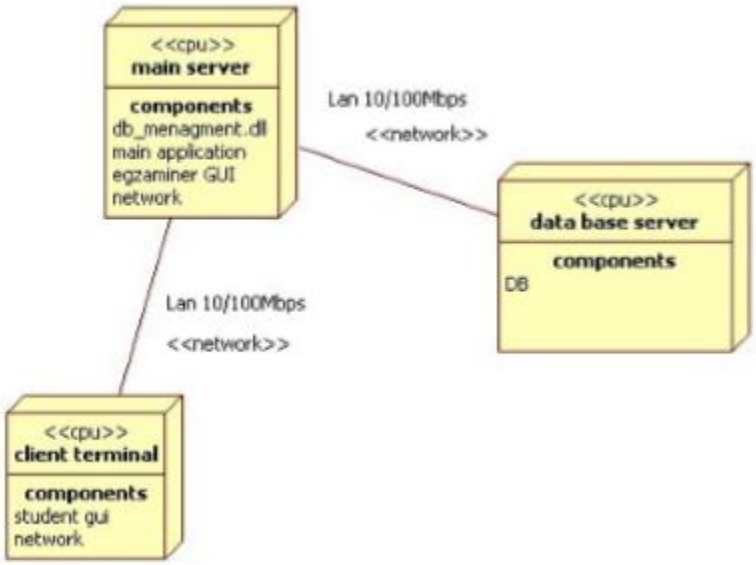
Take Exam:


Take Exam
Select time slot
Time slot unavaiable
Give exam
End exam

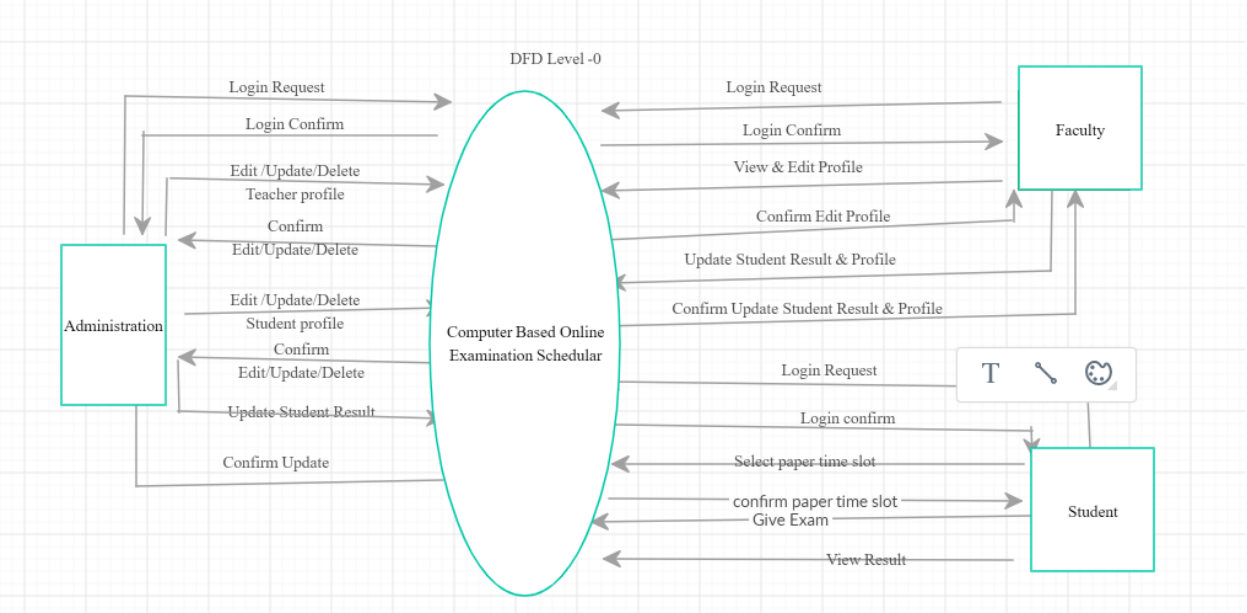
4.7. Component Diagram

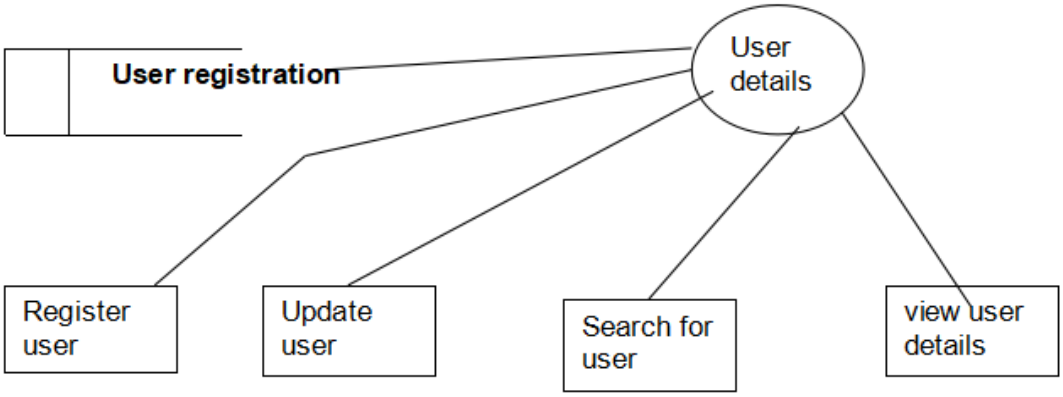


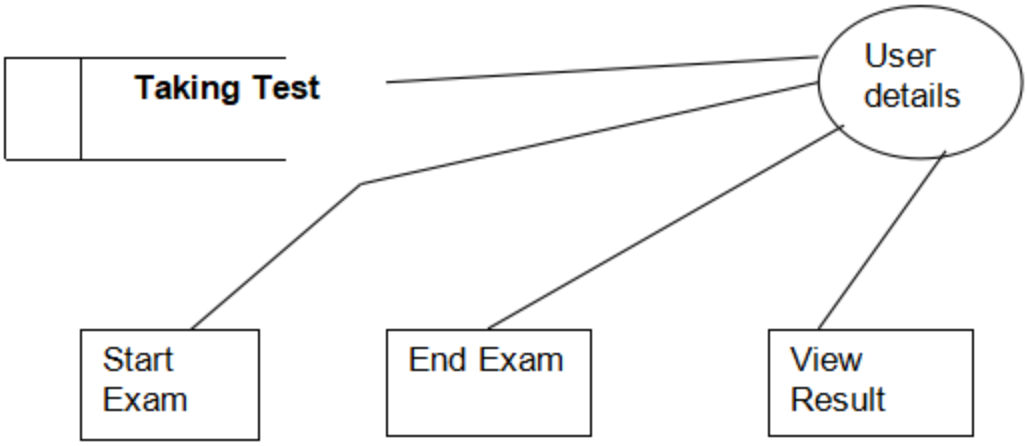
4.8. Deployment Diagram



4.9. Data Flow diagram [*only if structured approach is used - Level 0 and 1*







20

Chapter 5

Implementation

Chapter 5: Implementation

In this chapter the procedure of implementing the project practically some security features are mentioned below

- The system should be following the security requirements, as it will run on browser.
- To identify the user the system will use cookies.
- Cookies will be maintained on client side by the system.
- A user cannot log into a system at a time from different browsers.
- To provide security secure connections will used.
- Data like passwords will not be contained by the sessions.
- Confidential date should not be used by the sessions.
- Password will not displayed by the web browser.
- For security purpose, the user will have access to front end while only the admin can access the back end.
- In case the user forget his password, a confirmation email will be send to his email address.

5.1. Important Flow Control/Pseudo codes

Php codes For registration/ login/home page and attempt paper

```
<?php
$filepath = realpath(dirname(__FILE__));
include once ($filepath.'/classes/User.php');
$usr = new User ();


   if($_SERVER['REQUEST_METHOD'] == 'POST'){
      $name = $_POST['name'];
      $username = $_POST['username'];
      $password = $_POST['password'];
      $email = $_POST['email'];

      $userReg = $usr->userRegistration($name, $username, $password, $email);
   }
   ?>
   Login
   <?php
```

```
$filepath = realpath(dirname(__FILE__));

include_once ($filepath.'/classes/User.php');

$usr = new User();


if($_SERVER['REQUEST_METHOD'] == 'POST'){

   $email = $_POST['email'];

   $password = md5($_POST['password']);


   $userLog = $usr->userLogin($email, $password);

}


?>

<!DOCTYPE html>


<html lang="en">


<head>

 <meta charset="utf-8">

 <meta content="width=device-width, initial-scale=1.0" name="viewport">


 <title>About - computer base examination system</title>

 <meta content="" name="descriptison">
```

```
<meta content="" name="keywords">

<!-- Favicons -->
<link href="assets/img/favicon.png" rel="icon">
<link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">

<!-- Google Fonts -->
<link
href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700
i|Raleway:300,300i,400,400i,500,500i,600,600i,700,700i|Poppins:300,300i,400,400i,500,500i,6
00,600i,700,700i" rel="stylesheet">

<!-- Vendor CSS Files -->
<link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
<link href="assets/vendor/icofont/icofont.min.css" rel="stylesheet">
<link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
<link href="assets/vendor/remixicon/remixicon.css" rel="stylesheet">
<link href="assets/vendor/owl.carousel/assets/owl.carousel.min.css" rel="stylesheet">
<link href="assets/vendor/animate.css/animate.min.css" rel="stylesheet">
<link href="assets/vendor/aos/aos.css" rel="stylesheet">

<!-- Template Main CSS File -->
<link href="assets/css/style.css" rel="stylesheet">
```

```
</head>

<?php include 'inc/header.php'; ?>


<?php

Session::checkSession();

?>


<body>


  <!-- ======= Header ======= -->

  <header id="header" class="fixed-top">

    <div class="container d-flex align-items-center">


    <h1 class="logo mr-auto"><a href="index.html">CBES</a></h1>

    <!-- Uncomment below if you prefer to use an image logo -->

    <!-- <a href="index.html" class="logo mr-auto"><img src="assets/img/logo.png" alt="" class="img-fluid"></a>-->


    <nav class="nav-menu d-none d-lg-block">

      <ul>

        <li><a href="index.html">Home</a></li>
```

```
<li><a href="admin/">Result</a></li>

<li><a href="project/">Upload Assignments</a></li>

<li class="exam.php"><a href="about.html">About</a></li>

<!-- <li><a href="profile.php">Exam</a></li> -->

<!-- <li><a href="trainers.html"></a></li>

<li><a href="events.html">Events</a></li>

<li><a href="pricing.html">Pricing</a></li>

<li class="drop-down"><a href="">Drop Down</a>

 <ul>

  <li><a href="#">Drop Down 1</a></li>

  <li class="drop-down"><a href="#">Deep Drop Down</a>


   <ul>

    <li><a href="#">Deep Drop Down 1</a></li>

    <li><a href="#">Deep Drop Down 2</a></li>

    <li><a href="#">Deep Drop Down 3</a></li>

    <li><a href="#">Deep Drop Down 4</a></li>

    <li><a href="#">Deep Drop Down 5</a></li>

   </ul>

 </li>
```

```
          <li><a href="#">Drop Down 2</a></li>
          <li><a href="#">Drop Down 3</a></li>
          <li><a href="#">Drop Down 4</a></li>
        </ul>
      </li>
      <li><a href="contact.html">Contact</a></li>

    </ul>
    -->
  </nav><!-- .nav-menu -->

  <a href="Logout.php" class="get-started-btn">Logout</a>

 </div>
</header><!-- End Header -->

<main id="main">
 <!-- ======= Breadcrumbs ======= -->
 <div class="breadcrumbs" data-aos="fade-in">
  <div class="container">
   <h2>Welcome To CBES</h2>
```

```
        </div>
      </div><!-- End Breadcrumbs -->
    <br>

    <div id="login">
        <div class="container">
          <div id="login-row" class="row justify-content-center align-items-center">
            <div id="login-column" class="col-md-6">
              <div id="login-box" class="col-md-12">
                <!-- <form id="login-form" class="form" action="" method="post"> -->
                  <!-- <h2 class="text text-center">Welcome To Online Exame</h2> -->
                  <!-- <br>
                    <p>New to Make-my-ride?<a href="registration.html"> Register</a>
here.</p> -->

                  <div class="main">
<!-- <h1>Welcome to CBES - Start Here</h1>
  <div class="segment" style="margin-right:30px;">
   <img src="img/online_exam.png"/>
  </div> -->
  <div class="segment">
  <h2>Computer base examination scheduler</h2>
```

Online examination is conducting a test online to measure the knowledge of the participants on a given topic.

In the olden days everybody had to gather in a classroom at the same time to take an exam.

For Online exam, you need a browser and the internet connection. It is a web based online examination solution

for students, organizations, coaching institutes which can be customized as per the requirements.This management system provides

simple and intuitive interface, a hassle-free flow from one test process to another.

<!-- <ul style="padding-top: 20px; padding-left: 50px;">

Start Here...

 -->

<!-- <input type="submit" name="login" id="loginSubmit" value="Login" class="btnSubmit"> -->

Start Here...

```
                <!-- </form> -->
              </div>
            </div>
          </div>
        </div>
      </div>


    </main><!-- End #main -->


    <!-- ======= Footer ======= -->
    <footer id="footer">


<div class="footer-top">
  <div class="container">


      <div class="row">


        <div class="col-lg-4 col-md-6 footer-contact">
          <h3>CBES</h3>
          <p>
            Superior University<br>
            Lahore, Gold Campus<br>
            Raiwind Road <br><br>
            <strong>Phone:</strong> +92 340 4984950<br>
            <strong>Email:</strong> hamid@gmail.com<br>
          </p>
```

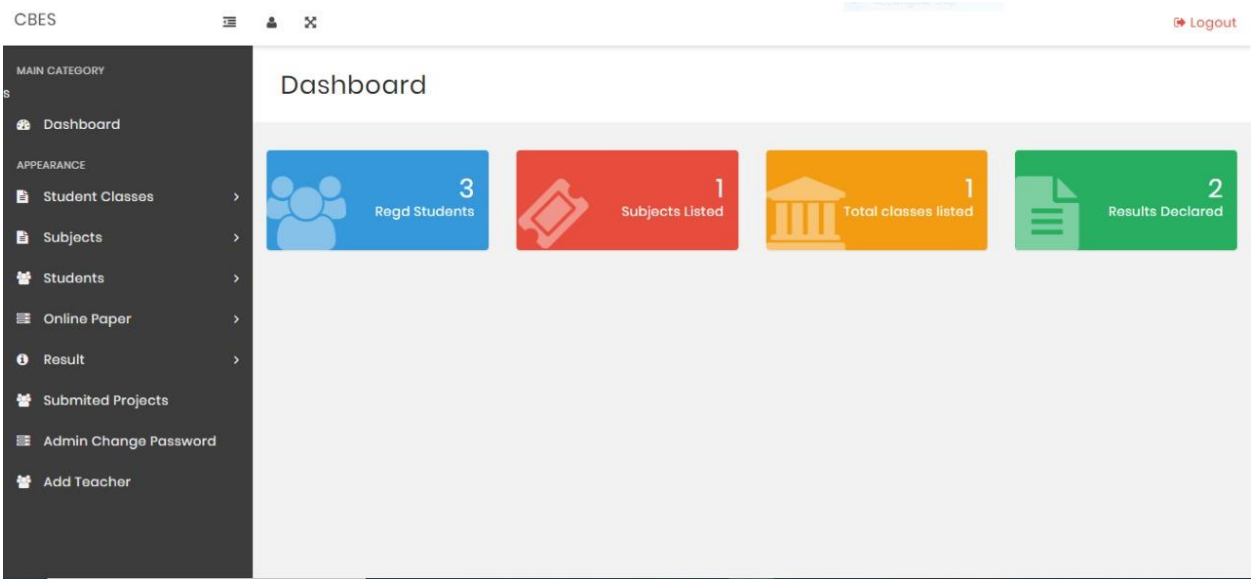
```
</div>


<div class="col-lg-4 col-md-6 footer-links">
 <h4>Useful Links</h4>
 <ul>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Home</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">About us</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Services</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Terms of service</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Privacy policy</a></li>

 </ul>
</div>

<!-- <div class="col-lg-3 col-md-6 footer-links">
 <h4>Our Services</h4>
 <ul>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Web Design</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Web Development</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Product Management</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Marketing</a></li>
  <li><i class="bx bx-chevron-right"></i> <a href="#">Graphic Design</a></li>
```

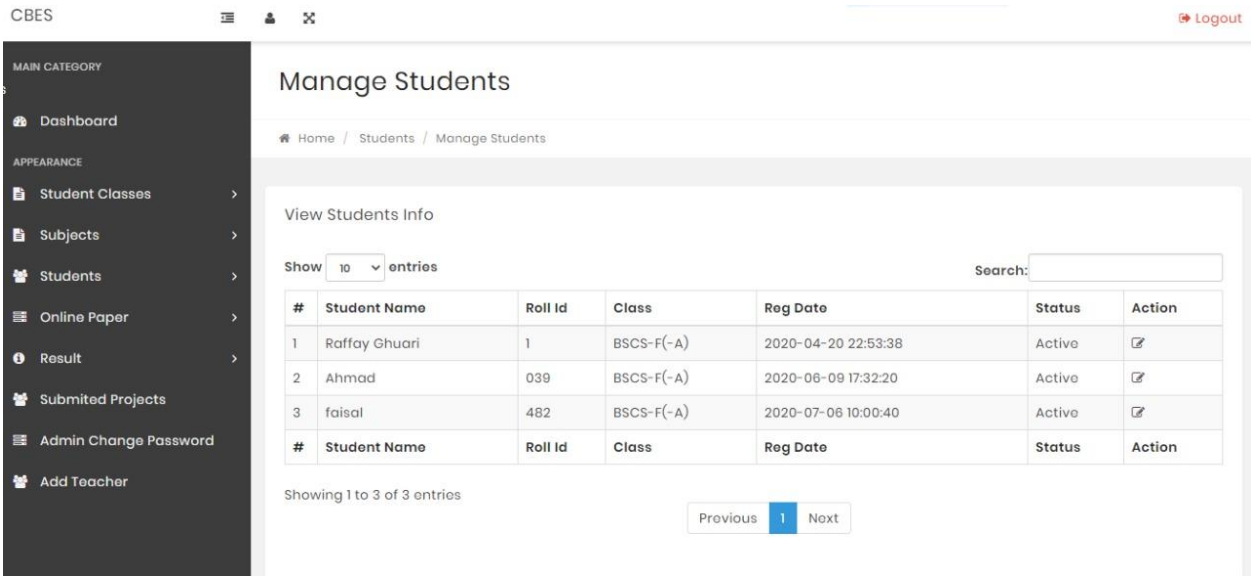
```
        </ul>
      </div> -->

      <div class="col-lg-4 col-md-6 footer-newsletter">
        <h4>Join Our Newsletter</h4>
        <p>The Superior Group (Superior College University Campus Raiwind Road Lahore)</p>
        <form action="" method="post">
          <input type="email" name="email"><input type="submit" value="Subscribe">
        </form>
      </div>

    </div>
  </div>
</div>



</footer><!-- End Footer -->

  <a href="#" class="back-to-top"><i class="bx bx-up-arrow-alt"></i></a>
  <div id="preloader"></div>

  <!-- Vendor JS Files -->
  <script src="assets/vendor/jquery/jquery.min.js"></script>
```

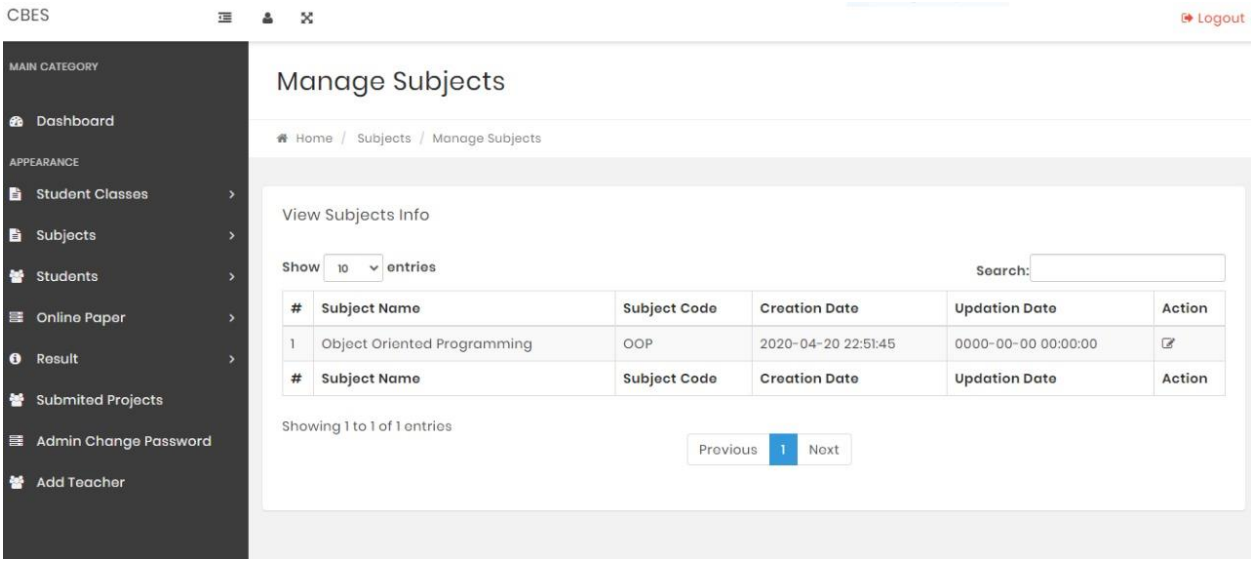
```
<script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>

<script src="assets/vendor/jquery.easing/jquery.easing.min.js"></script>

<script src="assets/vendor/php-email-form/validate.js"></script>

<script src="assets/vendor/waypoints/jquery.waypoints.min.js"></script>

<script src="assets/vendor/counterup/counterup.min.js"></script>

<script src="assets/vendor/owl.carousel/owl.carousel.min.js"></script>

<script src="assets/vendor/aos/aos.js"></script>



 <!-- Template Main JS File -->

 <script src="assets/js/main.js"></script>


</body>


</html>
```

Screen shots

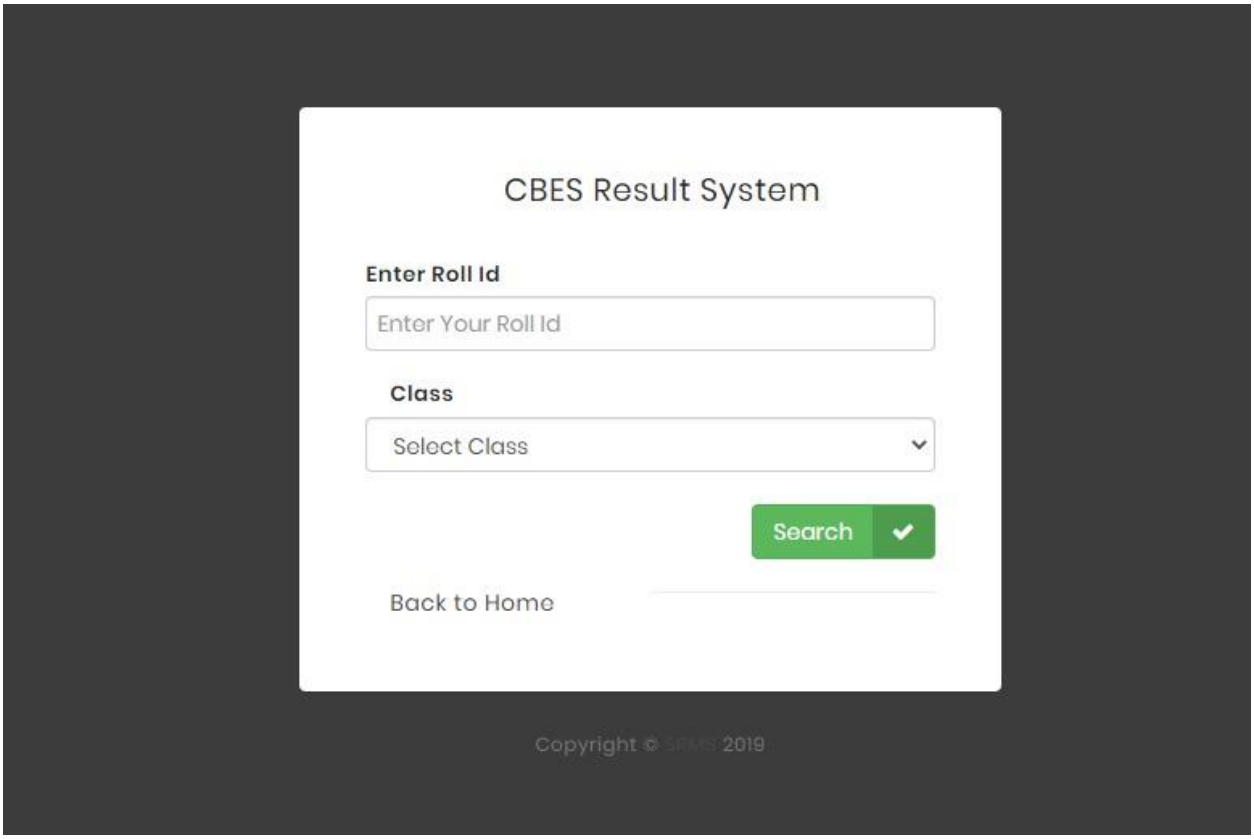
Admin and Teacher Dashboard



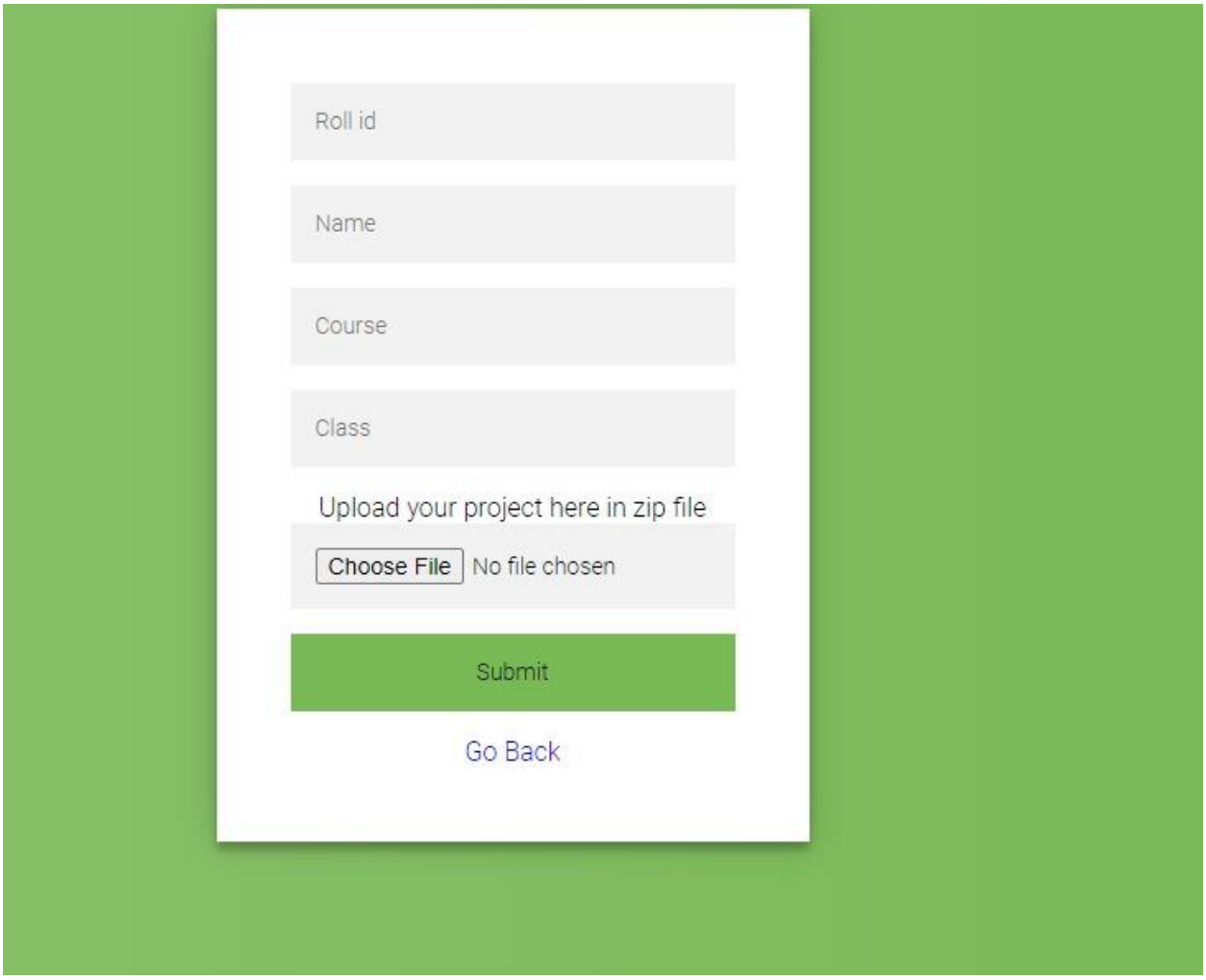




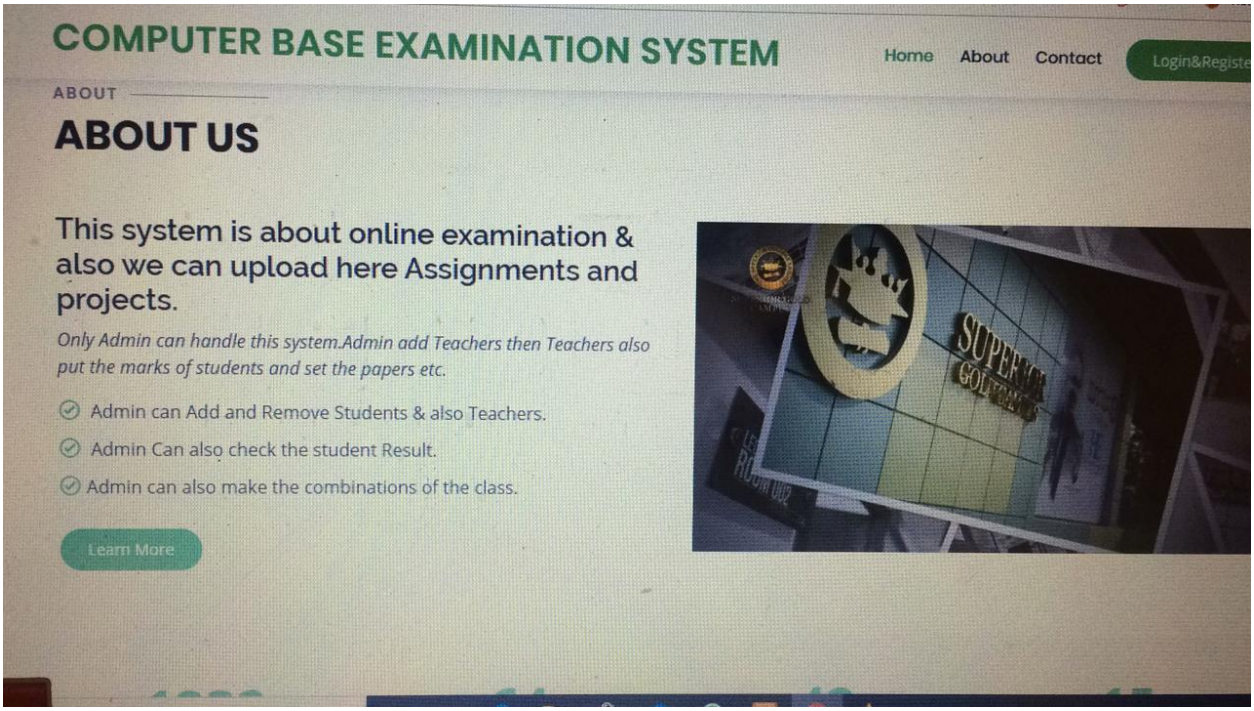
Student Result

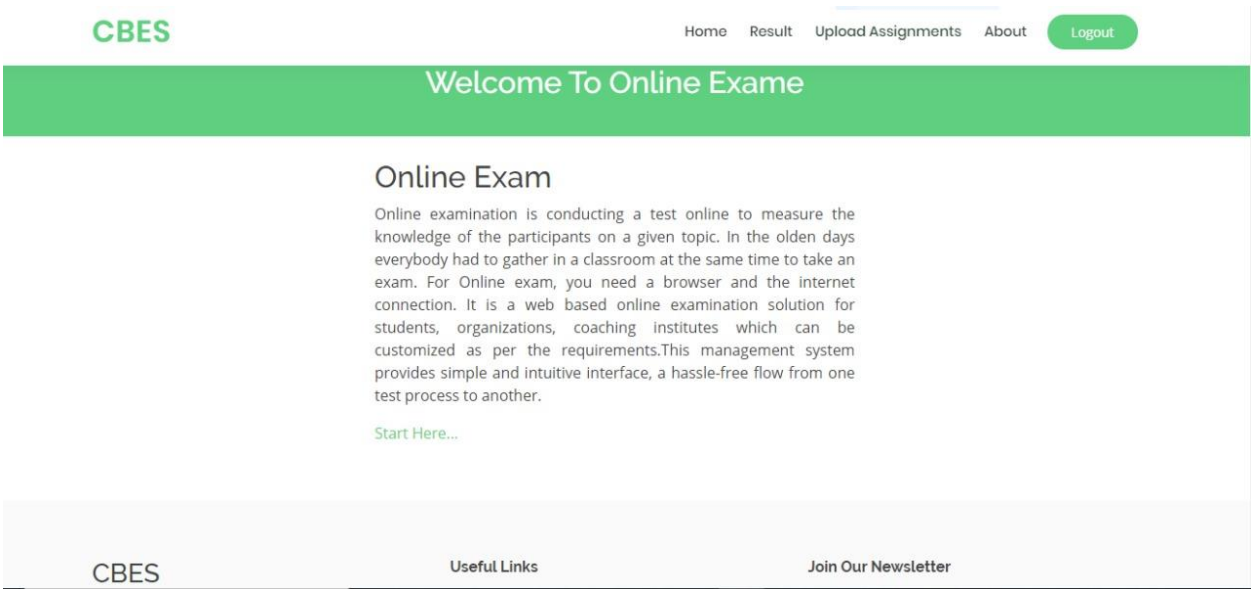


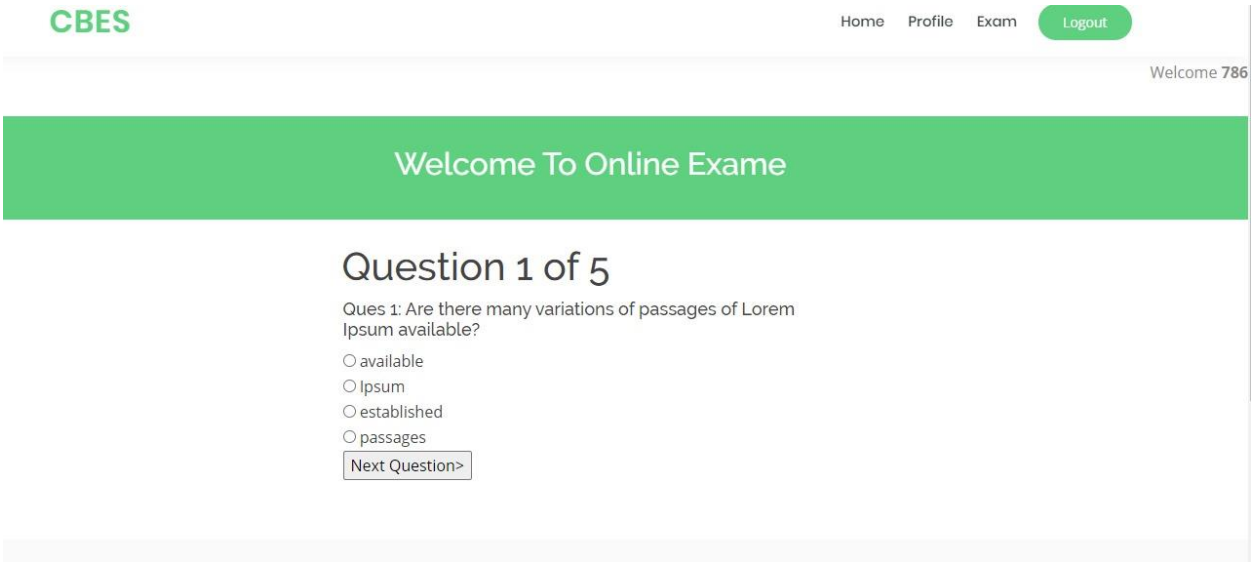
Upload Assignment and Project

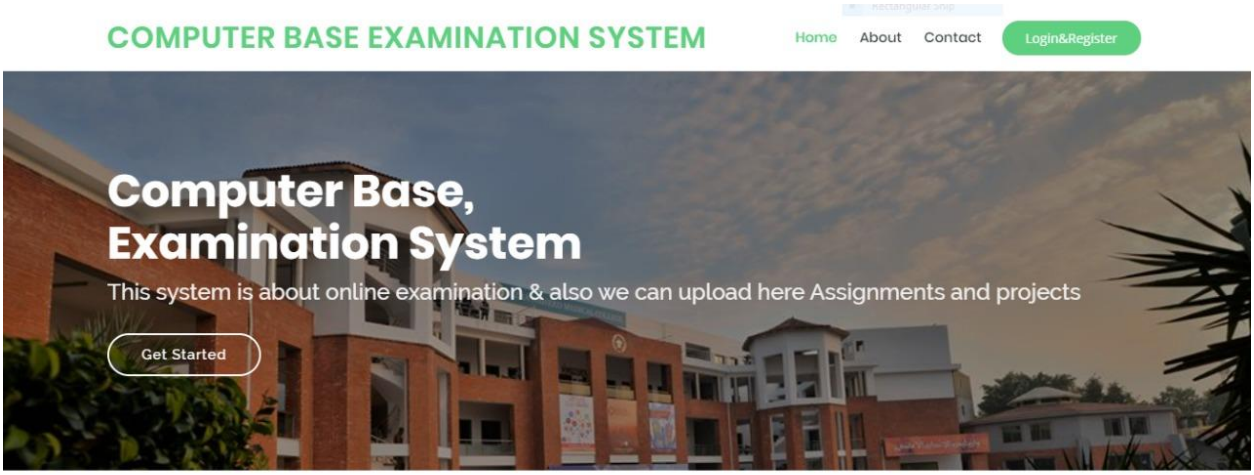

Roll id
Name
Course
Class
Upload your project here in zip file
Choose File
No file chosen
Submit
Go Back

Home page


COMPUTER BASE EXAMINATION SYSTEM
Home
About
Contact
Login&Registe
ABOUT
ABOUT US
This system is about online examination & also we can upload here Assignments and projects.
Only Admin can handle this system.Admin add Teachers then Teachers also put the marks of students and set the papers etc.
Admin can Add and Remove Students & also Teachers.
Admin Can also check the student Result.
Admin can also make the combinations of the class.
Learn More


CBES
Home
Result
Upload Assignments
About
Logout
Welcome To Online Exame
Online Exam
Online examination is conducting a test online to measure the knowledge of the participants on a given topic. In the olden days everybody had to gather in a classroom at the same time to take an exam. For Online exam, you need a browser and the internet connection. It is a web based online examination solution for students, organizations, coaching institutes which can be customized as per the requirements.This management system provides simple and intuitive interface, a hassle-free flow from one test process to another.
Start Here...
CBES
Useful Links
Join Our Newsletter


CBES
Home
Profile
Exam
Logout
Welcome 786
Welcome To Online Exame
Question 1 of 5
Ques 1: Are there many variations of passages of Lorem Ipsum available?
available
Ipsum
established
passages
Next Question>


COMPUTER BASE EXAMINATION SYSTEM
Home
About
Contact
Login&Register
Computer Base,
Examination System
This system is about online examination & also we can upload here Assignments and projects
Get Started


ABOUT
ABOUT US

5.2. Components, Libraries, Web Services and stubs

Enough labels and explanations are contained within the description so whenever a developer wants to modifies it or change it then he can get the desired field easily. The concept of shared libraries has been used for class libraries.

PHP Standard libraries are the substitution of the portable libraries and platform-specific ideas. They are platform-specific in the way that they revel all functionality from the fundamental platform .ad these libraries work on all supporting platforms that's why they are called portable libraries.

The PHP Standard reveals a collection of library agreements. PHP applications should support all the agreements totally or it should deny it completely. Each application, consequently, supports a collection of PHP Standard agreements. The result is that every PHP Standard class library is maintained on the stages that support its agreement dependencies.

Control and Component Development

System Component Model delivers classes that are used to developed for run-time and interface- time performance of controls and components. For interfaces and base classes and implementing attributes the namespace is included , type converters are used, required to data bases, and licensing mechanisms.

System.Web.UI.Design – contains classes that can be used to extend design-time support for Web Forms.

System.Web.UI.Design.WebControls – contains classes that can be used to extend design-time support for Web server controls.

System.Web.UI.Design.WebControls.WebParts – contains classes that provide design-time support for controls derived from classes in the System.Web.UI.WebControls.WebParts namespace.

Configuration

System. Configuration – provides classes and interfaces that allow you to programmatically access PHP Framework configuration settings and handle errors in configuration files (.config files).

System.Web.Configuration – contains classes that are used to set up ASPPHP configuration

5.3. Deployment Environment

Website

Admin panel

Teacher panel

Sql server database

5.4. Tools and Techniques

Sublime text

XAMMP server FOR SQL DATABASE

HTML, CSS, and java script for front end

PHP for DATBASE

Testing

The process of finding errors by processing a program is called testing. it's the ultimate verification and validation activity .In testing section we've tried to affirm the standard of the merchandise. Also work on to remove errors within the previous stages.

Testing Techniques

There are different phases of testing in website development

- **Functionality Testing.**

Functionality testing is performed to check the functionality of the system in our case we have applied functionality testing as all the functions of the website are working correctly

Check for all links used in web- pages are working properly and authorize there are not any cracked links. Links to be tested will include -

Outward links

Inner links

Broadcaster Links

Mail to Links

It include the testing of forms created for testing working according to exceptions.

Test default standards are being occupied once submitted, check whether the information in the forms is going directly to a database or it is connected with an email address link

Forms are optimally organized for improved readability

Check Cookies are performing according to exceptions. Cookies are minor files active by websites to frequently recall active user periods so when a user visit a site he will not log in to a website.

Cookie Testing will contain sessions are erased either when cache is cleaned or once reached at expiry time

Remove sessions and check that login authorizations are requested for once you next time visit the site .Check HTML and CSS to ensure that search engines can sneak the website easily. This will contain testing for Syntax Errors. Checking of commercial workflow-

This type of testing will include .check for user to system work-flow/ business situations which helps a user to complete different type of information tasks in web pages .check harmful situations also , as when a user having less knowledge about a task and he do not complete it correctly then an error message will show.

- **Usability testing.**

This type of testing is performed to check the usability of pages buttons links and other things on a website to check whether these things are accessible to the user easily

It also include the points

- Testing for navigation and testing for the consistent interface
  Providing the options to go back home page and previous pages
  data or content testing
  Easy to access the data and for reading
  Using the data in the form of small paragraphs and understandable or in easy language
  Test the display of pictures and visuals
  General Look of web-pages
  Organized web-page
  Authorization User is at any stage of time
  Convenience/assistance for User Help

- **Interface testing.**

This testing is performed to test the interface of the website as the interface is attractive and it is attracting the user and working according to the desire of the user and

The key interfaces are: Website server and application server interface Application server and Database server interface test for: Connections between Servers Appropriate Error Handling by applying the method of ASTICR(Application Server Transaction Interruption Connection Reset)

- **Compatibility testing.**

This testing is performed to check the compatibility of the system and to test whether the system is performing the tasks and it is compatible with different machines and it works properly on different devices.it also includes

Network connectivity types

Internet Standard Protocols types

Browser compatibility checking with various modules/kinds of several browsers (example opera, google chrome etc.)

Testing for the compability of operating system with the help of mobile browsing printing options

- **Performance testing.**

This include the testing of response time of a website at various connection points or levels. Testing of the website to test the performance under standard and top loads. Testing the web application for stress to check its break point when it cross the limits at normal loads and at peak time. Ensure optimization methods like , browser and server side sessions allowed to decrease burden times and tests the Scalability and the Reply time Load.

Number of user at a time? Testing for highest loads and how systems performs when the amount of data is huge accessed by the user and behavior or performance of memory central processing unit and other parts when the stress is continuously increasing

- **Security testing.**

Security testing is a key point in website specially in online working websites it include the security points

Testing for unauthorized access to

Secured pages

Downloadable file without authorization.

Test sessions are spontaneously destroyed after a specific time of user inactivity. When SSL certificates are used, the website must re-direct to encoded SSL pages.it also contain the topics Network Scanning for communication among the Application Server and Database Server and the Client with the Application.

Server Data Encryption Log Review testing that the Log files get modernized appropriately Reliability Checkers/SSL

Testing for Virus Recognition

Inner URL Testing

Testing for download Options

5.5. Best Practices / Coding Standards

For the best practices, use the agile development technique to make this application. Agile Software Development is an umbrella term for a set of methods and practices based on the values and principles expressed in the Agile Manifesto. The main objective of code is to provide the identification, backup the things and information. A code is an oriented addition of symbols design to supply unique identification of an entry or specifications. Code is designed with manually exclusive attributes. Codes in all circumstances specify object which are physical or on performance characteristics. They are used to give optimal interruption and other information. Codes are used for detecting, retrieving, loading and corresponding records. The codes assure the thing that you have given a name to a single class or entity and it is not repeating. The code can be also be designed in a way simply understood and can be used by the user easily. The coding standard consist of name changes of variables, constants and objects, .

5.6 Limitation and Future

Everything has an option to be enhanced in future according to the user requirements. It is the fact that nothing is permanent in this world. Therefore, this project also has some future enhancements in the evergreen and booming IT industry. Change is inevitable. The project entitled computer based examination scheduler" has been successfully designed developed and tested. The system and the architecture is a compatible one, so addition of new modules can be done without much difficulty. Since this module has its unique properties it can extend further to make this system a complete one. In future we will add some more futures in it

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

6.1. Unit testing

Unit testing consist of a number of testing's executed by a separate program preceding to the combination of the unit into a huge system. A program part is generally the tiniest free operating part of the system. Component unit testing must be as comprehensive as possible to guarantee that each symbol controlled by each unit has been tested. To ensure that every unit of a system is working accurately and as desired unit testing is compulsory. During the unit testing there were errors, which raised at different levels, which were removed quite well.

6.2. Integration testing

This testing is a system procedure for building the program configuration and also cover the interface errors at the same time. The objective is to take unit tested modules and build a program structure that has been read out by interface. Bottom-up integration is the customary approach which is used to combine the units of a software system into complete and working system. Bottom-up integration comprises of unit test monitored by testing of the whole system. More than one modules combine to build a sub system to perform tasks. We have tested our system to a specific level and according to the results of this testing almost all the modules are working efficiently and the testing was successful.

6.3. Performance testing

The process of find out the swiftness and efficiency of a program or device is called performance testing. This procedure can include measureable tests completed in a lab, as calculating the reply time or the amount of MIPS at which a system works.

Web application reply times at various joining stages. Check the website to test its performance in usual and top loads points.to find out the break point of a website under normal and peak load

perform the stress testing. Ensure optimization methods as, to reduce the load and increase the performance the cookies are enabled of the website.

6.4. Stress Testing

This type of testing is used to test the strength & consistency of a system. This testing mostly defines the system on its strength and error control under enormously huge load circumstances. stress testing is used to analyze and find out the stress range of a system, and the point where a system or its parts break or start misbehavior.

6.5 Boundary value analysis

Login Analysis

Test Suite ID	TS1
Test case ID	TC1
Test case Description	Verify that login button works.
Related Requirements	Customer login using email and password.
Test Procedure	1. Enter Email address into the text box. 2. Enter password into the text box. 3. Press ENTER.
Test Data	1 admin@gmail.com 2 arkhan@.gmail.com 3 Password: admin 4 12345
	1. It should display the message “” if entered email address is valid. 2. It should display the warning message .if entered invalid

Expected Result	Email address. 3. It should display the warning message. If email input is blank. 4. It should show the warning message if password is incorrect. 5. It should show the message “successfully login”. If password is correct.
Actual Result	1. If you enter the valid Email. It is showing the massage””. 2. If you enter the invalid Email. It is showing the message” incorrect Email”. 3. If you don’t enter Email. It is showing the message” please fill the email box”. 4. If password is incorrect. It is showing the message “incorrect password”. 5. If password is correct than go to Home page.
Status	Pass
Author	Allah Rakha
Date of Creation	15/06/2020

Student registration

Test Suite ID	TS2
Test case ID	TC2
Test case Description	Verify and Create the login account for user.
Related Requirements	For registration of student and to create the student profile.
Test Procedure	. 1. Press register 2. Enter "user name". 3. Enter "phone". 4. Enter "CNIC". 5. Enter "Email". 6. Enter "Password". 7. Enter "Confirm Password". 8. Click on "register" button.
Test Data	1 allah rakha ,faisal mehammod ,hamid raza 2 03074755423,03029663811 5 Ar7721378@gmail.com 6
	1 The user name of letter is less than <20 then request is submit. 2 It should display the warning message if letters>20. 3 It should display the warning message if Email is invalid. 4 It should display the message "successfully register" if Email valid.

Expected Result	upper and lower letters use in it. 6 It should display the warning message if not include upper and lower letter. 7 It should display the warning message if password is less than eight digits. 8 It should display the warning message. If one of the field is blank.
Actual Result	1 If first and last name letters is <20 then accepted. 2 It should display the warning message if letters >20 digits. 3 If enter valid Email then accepted 4 It should display the message "incorrect Email" if Email is invalid. 5 If enter valid password then accepted. 6 If password length >8 <then it is not accepted. 7 If password cannot contain upper and lower letter then it is not accepted. 8 It should display warying message if any one fields are blanks.
Status	Pass
Author	Allah rakha
Date of Creation	15/06/2020

Logout Analysis

Test Suite ID	TS3

Test case ID	TC3
Test case Description	Verify the “logout” button.
Related Requirements	Click to logout button for logout his account.
Prerequisites	1. TS:1 (Authorized by student login)
Test Procedure	. 1. Press to “logout” button.
Test Data	NIL
Expected Result	1. It should Logout from the system when logout button is clicked
Actual Result	1. logout the account from system .
Status	Pass
Author	Allah rakha
Date of Creation	15/06/2020

Teacher availability Analysis

Test Suite ID	TS4
Test case ID	TC4
Test case Description	Verify the register teacher officer that are available in system.
Related Requirements	Check that TIME display required information by clicking on it.
Prerequisites	1. TS:1 2. TS:3
Test Procedure	1 Check availability time on screen.
Test Data	➢ Allah rakha ➢ Monday, June, 2020 ➢ Wednesday, June 2020
Expected Result	1. It should display the message “available” if teacher is present . 1. It should display the message “ not available” if teacher is not fill any field in the system.
Actual Result	1 It should display the message “available” if teacher is present 2 It should display the message “ not available” if teacher is not fill any field in the system.
Status	Pass

Author	Allah rakha
Date of Creation	15/06/2020

TEACHER ACCOUNT

Test Suite ID	TS5
Test case ID	TC5
Test case Description	Verify Teacher
Related Requirements	Teacher Name ,Image ,Qualification, Mobile number/.
Test Procedure	➢ Click on lab register button. ➢ Enter name ➢ Upload Image, ➢ Enter qualification ➢ Enter Auto Mobile number ➢ Press Submit
Test Data	➢ ALLAH RAKHA ➢ M Phil
Expected Result	The Teacher will enter His detail that show on status. The Teacher will not enter His details then show on status.
Actual Result	The Teacher will enter His detail that show on status. The office will not enter His details then show on status.

Status	Pass
Author	Allah rakha
Date of Creation	15/6/2020

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1 Project Summary

Online exams are an important method for assessing the students' potential for success. The students who would be enrolling in computer courses or technology registrations were the subjects of this research effort. A prototype of a web-based placement review system is described from the research effort, end-user, and software development standpoint. An online education system that includes the processing of exams and the features of electronic journals. An instructor constructs a course-based question contained on-line in assignment identification .Which are compiled into a syllabus of an on-line exam. Users who are enrolled in the program can access the electronic information they received and perform various functions with the online educational system to participate in the online exams. For the course, participants can provide an on-line review, provide interactive content, and can have answers for the test electronically. And they are given the grade or marks obtained in their exams upon completion of their test period.

7.2 . Achievements and Improvements

7.2.1 Team work Lead to the achievement

All the team member doing hard work as well as smart working , because when we start we did not know how we could do this in small time period but at the mid of the software development we divide our work in module three member doing the development work two member test the app in different angle and documentation is made by dividing all the chapter one by one

7.2.2 A Start, Middle and End

The starting conditions are really weak, and 'poor results,' 'high costs,' 'unpalatable risk,' and proceed with a declaration of what you've done to solve it (project, reform program, etc.) and then top it off with the outcome – has the desired goal been achieved? Here we tell you the story that generates a deeper, more vivid tale.

7.2.3 The Effect of the Achievement, 360-degree style

The website that we are making is a major accomplishment from our own viewpoint as well as from our colleagues , supervisors, management and customers (if applicable) It explains the accomplishments in an organizational sense, it also demonstrates how you think. It barely ever does.

7.3 . Critical Review

- What is the main topic being discussed?
- What are the key findings?
- What are the limitations stated?
- What are the key issues the author raises?

7.4. Lessons Learnt

1. Single individual is not sufficient to develop an app Small start, then expand.

2. Shift one thing at a time.

3. Add early logging, and handle errors

4. The execution of all new lines shall be at least once.

5. Test the parts in front of you

6. It takes no longer than you thought

7. Comprehend current code first

8. Read and execute

7.5. Future Enhancements/Recommendations

There's nothing that can end in a single move. It's the truth nothing in this universe is permanent. Thus, this project has some potential developments in the evergreen and booming IT industry as well. Change is inescapable. The project titled "Computer Based Examination Scheduler" (CBES) was developed and tested successfully. The framework and software are compatible and new modules can be introduced without much trouble. Because this module has its specific properties, it may further develop to make this program a full one. We look forward collaborating with the Education Sector in enforcing commendations there and seeing an increase in the Education Department’s effectiveness.

The method of video conferencing can be added to make the project livelier. Users can view

the progress of their study online. The study information and findings can be viewed on you computer by potential users of the technology. The improvement, which we can add to the search option. From this site, we can search the particular student details directly.

Reference and Bibliography

Reference and Bibliography

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