MINI PROJECT

(2020-21)

EXAMROOM

Institute of Engineering & Technology

Submitted By -

Abhishek Yadav   (191500041)

Kinjal Varshney   (191500399)

Karan Chaurasia   (191500381)

Suraj Mishra   (191500828)

Sani Chaturvedi   (191500713)

Under the Supervision Of
Md. Farmanul Haque
Technical Trainer
Department of Computer Engineering &
Applications

Department of Computer Engineering

and Applications GLA University, 17 km.

Stone NH#2, Mathura-Delhi Road,

Chaumuha, Mathura – 281406 U.P

(India)

Declaration

I/we hereby declare that the work which is being presented in the Bachelor of technology. Project **"Exam Room"**, in partial fulfillment of the requirements for the award of the *Bachelor of Technology* in Computer Science and Engineering and submitted to the Department of Computer Engineering and Applications of GLA University, Mathura, is an authentic record of my/our own work carried under the supervision of **Md. Farmanul Haque, Technical Trainer, Dept. of CEA, GLA University.**

The contents of this project report, in full or in parts, have not been submitted to any other Institute or University for the award of any degree.

Sign:
Name of Candidate: Karan Chaurasia
University Roll No.:191500381

Sign:
Name of Candidate: Kinjal Varshney
University Roll No.:191500399

Sign:
Name of Candidate: Abhishek Yadav
University Roll No.:191500041

Sign:
Name of Candidate: Suraj Mishra
University Roll No.:191500828

Sign:
Name of Candidate: Sani Chaturvedi
University Roll No.:191500713

Department of Computer Engineering and Applications GLA

University, 17 km. Stone NH#2, Mathura-Delhi Road,

Chaumuha, Mathura – 281406 U.P (India)

Certificate

This is to certify that the project entitled "Exam Room", carried out in Mini Project – I Lab, is a bonafide work by Karan Chaurasia, Kinjal Varshney, Suraj Mishra and Sani Chaturvedi , Abhishek Yadav is submitted in partial fulfillment of the requirements for the award of the degree Bachelor of Technology (ComputerScience & Engineering).

Signature of Supervisor:

Name of Supervisor: Md. Farmanul Haque

Date: 30 Nov 2021

This is certify to:

Karan Chaurasia(191500381)

Kinjal Varshney(191500399)

Suraj Mishra(191500828)

Abhishek Yadav(191500041)

Sani Chaturvedi(191500713)

ACKNOWLEDGEMENT

Presenting the ascribed project paper report in this very simple and official form, we would like to place my deep gratitude to GLA University for providing us the instructor Md. Farmanul Haque, our technical trainer and supervisor.

He has been helping us since Day 1 in this project. He provided us with the roadmap, thebasic guidelines explaining on how to work on the project. He has been conducting regular meeting to check the progress of the project and providing us with the resources related to the project. Without his help, we wouldn't have been able to complete this project.

And at last but not the least we would like to thank our dear parents for helping us to grab this opportunity to get trained and also my colleagues who helped me find resources during the training.

Thanking You

Sign:

Name of Candidate: Sani Chaturvedi

University Roll No.:1915000713

Sign:

Name of Candidate: Abhishek Yadav

University Roll No.:191500041

Sign:

Name of Candidate: Kinjal Varshney

University Roll No.:191500399

Sign:

Name of Candidate: Karan Chaurasia

University Roll No.:191500381

Sign:

Name of Candidate: *Suraj Mishra*

University Roll No.:191500828

ABSTRACT

In this project, we are creating an Web-app, basically a Exam portal which we have named Exam Room. Online examination system is a web-based examination system where examinations are given online. either through the internet or intranet using computer system. Research and comparison for different web examination system in the current individual field, proposed a set of design mode about general examination platform which apply in colleges and universities, research and analysis the key technology, and proposed improved scheme, made system being perfect. This application will provide us a platform to practice for any competitive exams . All the users will be having their separate accounts on this portal which will be connected to their username and email id. Any exam that the user wishes to practice will be entered by him in the search box which works on the basis of queries input. The query may be any competitive exam, the Quize name or the subject to which the Quize is related and will also work on specific keywords input. Apart from searching the Quizes online, the user can save the Quize he/she likes in the favourites bar. The app is suitable in the present scenario as the world is being digitalized then why not the education system.. On the profile of the user, one can easily view the exam he/she has to practice. The portal will be completely efficient and transparent. To get more details about the exam one can click on the exam and get further grave details. This app will be using The Google Quize API for providing all the Quizes. Further the FAQ section provides all the necessary details that the user may need about the app. The app also has a complete User Interface attached to the firebase a perfect login system with email id and password and a forget password too.

CONTENTS

LIST OF FIGURES:-

CHAPTER-1

INTRODUCTION

1.1 CONTEXT

This Online Portal "Exam Room" has been submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at GLA University, Mathura supervised by Md. Farmanul Haque This project has been completed approximately three months and has been executed in modules, meetings have been organised to check the progress of the work and for instructions and guidelines.

1.2 MOTIVATION

In the recent years, we have realized the importance of virtual learning and how important it is for us to have our resources online. Conducting exam online makes it easy for both the student and organization.

In the century we are living the world is progressing at a really great pace, a lot number of technologies come up every single day. To keep up with the technology is also important to survive in this world of digitalization and learning. Along with this we need to have a place to keep the resources for areas of our interest so we thought of developing a portal which could provide us with exam conduction as well as a platform where we could keep the we like marked. Adding to its features, some of the Quizes will pop up into the suggestion box according to the recent search, making you go deep into the field you are learning in.

Moreover this kind of application can be used in areas/schools where guardians /parents cannot afford to buy Quizes. This would be an excellent effort to provide education without any boundaries to all.

1.3 OBJECTIVE

Online examination system is one of the method of taking exams which is doesn't require any kind of a piece of paper or a pen.It is the fast growing method to take exams over online. Speed and accuracy is the reason behind the famous of this method because speed and accuracy is the backbone of this system.

This system architecture consist of 3 sections:- frontend, backend and database server. For the design of the system we used interpreted programming language javascript, Springboat in order to send and retrieve data from the server, css for the styling of web pages and the relational database management system Mysql. The whole system is divided into three modules: administrator module, teacher and student module

1.3   EXISTING SYSTEM

The Exam ROOM has the pool of student data, Where the NAME, Roll Number, Subject name, the name of the INVIGILATOR, the timings of START and END of exam. The Exam Portal System is idea to help School, College to conduct examination in the pandemic like covid-19 it also helps to conduct fair exams for example we have GLA EXAM PORTAL which provide student of GLA university to go for online exam and fair exams are conducted. The GLA University Exam Portal consist of a log-in page where students with the help unique university roll no. and password get login onto the portal, On the portal a pre-assigned exam which are going to be conducted in the coming week is mapped so that student can study and know which subject exam is coming up, after starting the exam it will ask you to switch on the camera for conduction of fair exams, where this small cam windows will be shown in invigilators system. At the end the timer for the exam is set and when the time is over the exam portal itself ends the exam and save the written or chosen answer. The EXAM ROOM can work on both Laptop/ Desktop and on Mobile Phones as if someone who is not capable to access the PC can give exam on mobile phones the portal works efficiently on both the System. Even admin or invigilator can uses mobile phone to keep track of exam.

EXAMROOM SYSTEM
PURPOSE:

The purpose of on-line test simulator is to take online test in an efficient manner and no time wasting for checking the paper. The main objective of on-line test simulator is to efficiently evaluate the candidate thoroughly through a fully automated system that not only saves lot of time but also gives fast results.

For students they give papers according to their convenience and time and there is no need of using extra thing like paper, pen etc.

SCOPE:

Scope of this project is very broad in terms of other manually taking exams.

Few of them are:-

● This can be used in educational institutions as well as in corporate

world.

● Can be used anywhere any time as it is a web based application(user

Location doesn't matter).

● No restriction that examiner has to be present when the candidate

takes the test.

FEATURES:

➢ Secure
➢ Easy to use
➢ Reliable and accurate
➢ No need of examiner

OVEVIEW:

The online test created for taking online test has following stages

> ➢ Login
> ➢ Test
> ➢ Result

Login:-

There is a quality login window because this is more secure than other login forms as in a normal login window there are multiple logins availableso that more than one person can access to test with there individual login. But in this project there is only one login id i.e. administrator id and password by which a person enter the site. Hence it is more secure and reliable than previously used on-line test simulators.

TEST:

Test page is the most creative and important page in this project. Itconsists of 2 modules namely:

> ❖ Subject selection
> ❖ Utilities

Subject selection:-

From the given choices the candidate can select his field (like C, C++ and JAVA etc) for taking on with the test.

Utilities:-

It includes:-

> ❖ Skip and come back to the question afterwards if needed.

> ➢ Gives the list of attempted and unattempted questions and can go to any question directly and can either attempt or change the answer of the already attemptedquestion.

TECHNOLOGIES USED

Front end as:
HTML & CSS, Typescript, Angular 9
Back end as:
Spring Boot
Server:
Apache tomcat 6.0
Database:
MySQL
Querying language:
SQL

CHAPTER-2
FEASIBILITY STUDY

1.) ECONOMIC FEASIBILITY

Economic analysis is most frequently used for evaluation of the effectiveness of the system. More commonly knows as cost/benefit analysis the procedure is to determine the benefit and saving that are expected from asystem and compare them with costs, decisions is made to design and implement the system.

This part of feasibility study gives the top management the economic justification for the new system. This is an important input to the management the management, because very often the top management does not like to get confounded by the various technicalities that bound to be associated with a project of this kind. A simple economic analysis that gives the actual comparison of costs and benefits is much more meaningful in suchcases.

In the system, the organization is most satisfied by economic feasibility. Because, if the organization implements this system, it need not require anyadditional hardware resources as well as it will be saving lot of time.

2.) TECHNICAL FEASIBILITY

Technical feasibility centers on the existing manual system of the test management process and to what extent it can support the system.
According to feasibility analysis procedure the technical feasibility of the system is analyzed and the technical requirements such as software facilities,procedure, inputs are identified. It is also one of the important phases of the system development activities.

The system offers greater levels of user friendliness combined with greater processing speed. Therefore, the cost of maintenance can be reduced. Since,

processing speed is very high and the work is reduced in the maintenance point of view management convince that the project is operationally feasible.

3) BEHAVIOURAL FEASIBILITY

People are inherently resistant to change and computer has been known to facilitate changes. An estimate should be made of how strong the user is likely to move towards the development of computerized system. These arevarious levels of users in order to ensure proper authentication and authorization and security of sensitive data of the organization.

EXISTING SYSTEM

The whole process of assigning test and evaluating their scores after the test,was done manually till date. Processing the test paper i.e. checking and distributing respective scores used to take time when the software was not installed.

DISADVANTAGES OF CURRENTSYSTEM

➢ The current system is very time consuming.
➢ It is very difficult to analyze the exam manually.
➢ To take exam of more candidates more invigilators are required but noneed of invigilator in case of on line exam.
➢ Results are not precise as calculation and evaluations are donemanually.
➢ The chances of paper leakage are more in current system as comparedto proposed system.
Result processing takes more time as it is done manually

<u>CHAREACTERSTIC OF THE PROPOSEDSYSTEM</u>

The online test created for taking online test has following features

- ➢ In comparison to the present system the proposed system will be lesstime consuming and is more efficient.
- ➢ Analysis will be very easy in proposed system as it is automated
- ➢ Result will be very precise and accurate and will be declared in very short span of time because calculation and evaluations are done by the simulator itself.
- ➢ The proposed system is very secure as no chances of leakage ofquestion paper as it is dependent on the administrator only.
- ➢ The logs of appeared candidates and their marks are stored and can bebackup for future use

CHAPTER -3

SOFTWARE REQUIREMENT ANALYSIS

2.1 IMPACT OF EXAMS ON DAILY LIFE

Exams have an important role in the process of learning and in the whole **educational** institution." **Exams** and tests are a great way to assess what the students have learned with regards to particular subjects. ... Strengths and weaknesses can also be assessed through **exams**. Exams have an important role in the process of learning and in the whole educational institution." Exams and tests are a great way to assess what the students have learned with regards to particular subjects. ... Strengths and weaknesses can also be assessed through exams.

The exam develops confidence which increases a student's personality in a hard-working manner.

At exam time, students become conscious about their exam performance and they do hard work and try to give the best performance.

When they get good marks they feel happy and their marks help to increase confidence level.he exam develops confidence which increases a student's personality in a hard-working manner.

2.2 PROBLEM STATEMENT

It is used to conduct assessment test, aptitude test, psychometric test, personality test, entrance exam and campus exams. Organizations can also easily monitor the progress of the student that they give through an examination[1]. As a result of this, the result is calculated in less time. It also helps diminishing the need for paper. Online examination project in PHP is very useful to learn it, According to today's requirement Online examination system is significantly important to the educational institution to prepare the exams, saving the time and effort that is required to check the exam papers and to prepare the results reports.

This portal is a complete with all the facilities a student desires and with the proper User Interface as well.

2.3 HARDWARE AND SOFTWARE REQUIREMENTS

Hardware Requirement

- Processor: RYZEN 5

- Operating System: WINDOWS 11

- RAM:8 GB

- Hardware Devices: ASUS LAPTOP

- Hard disk: 512GB SSD, 1TB

Software Requirement

- Technology Implemented: SPRING BOOT

- Language Used: JAVA

- Database: MYSQL

- User Interface Design: ANGULAR

- Web Browser: GOOGLE CHROME

2.4   MODULES AND FUNCTIONALITIES

User Characteristics:

There are 3 kinds of users in the proposed system.

•**Student:** The student will logon to the system and take his/her examination. He can also check his previous examinations marks and his/her details. The student will get result immediately after the completion of the examination.

•**Administrator:** The administrator is the main user of the system, and he can control complete website.

Examiners of each course will prepare questions and its options and loaded into the software. Examiners will approve student certificates generated by system.

Project modules of Online Exam Portal:

•**Login Module:** In this module user can login to the website by entering login ID and password. After Login the system links to Profile page.

•**Accounts Module:** The module maintains the details for each student as well as provides a facility for editing the student details and the students can change their own passwords in this module if required.

•**Examination Module:** In this module students can take the exam and submit the answers. The system can automatically create exams by randomly choosing questions from database. It provides limited time to answer the questions. When the student starts the exam the timer will start automatically and show the student how much time is left. After the exam this module will be disabled automatically and Results can be viewed immediately upon Submission.
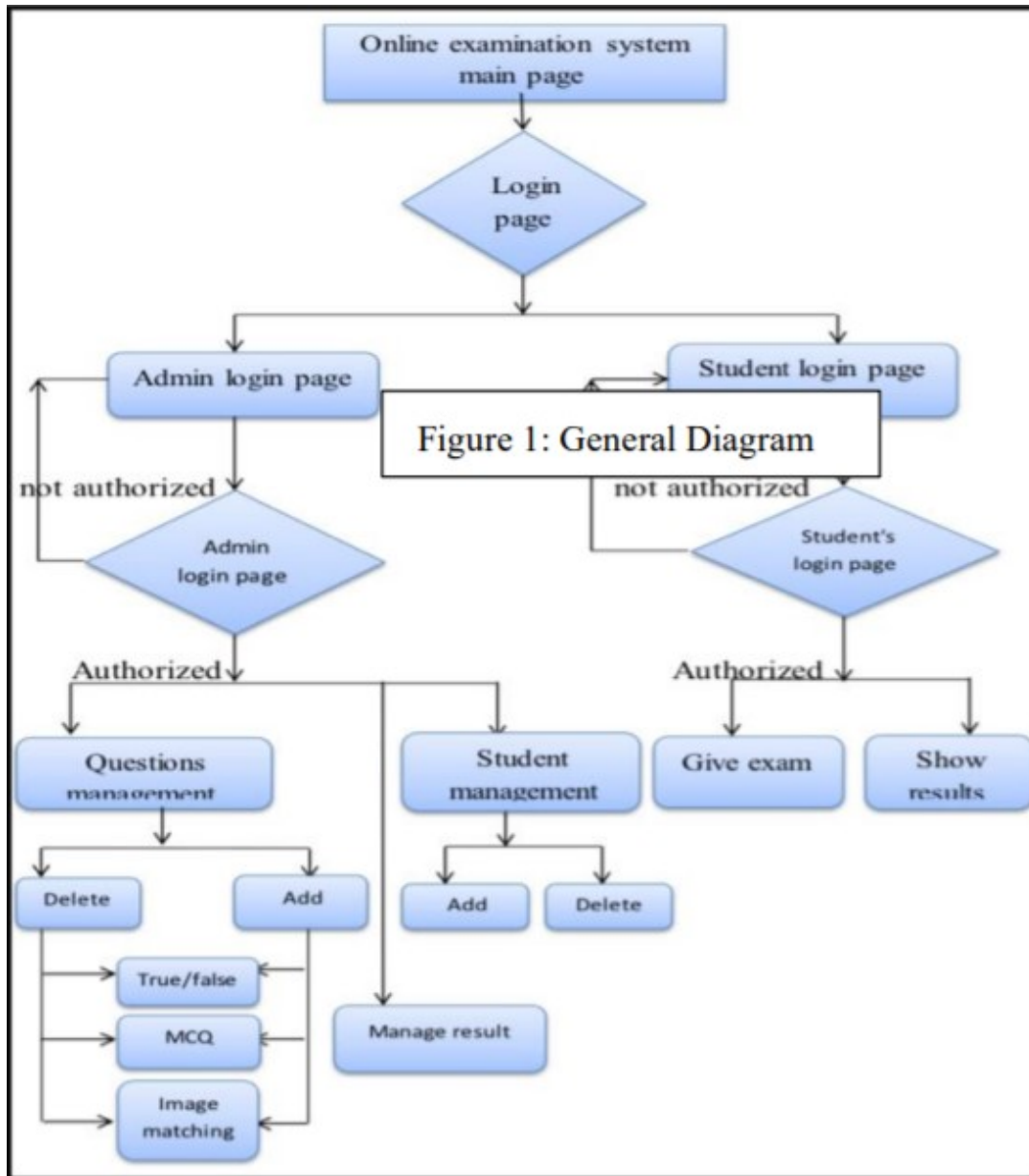
- **Dashboard Module:** Only Administrator and Examiner can access this module. here administrator or examiner can view student details, Marks report, examination report, etc. It has a facility to Add students details, view Student List as well as Edit student details and Also administrator can manage users details, course and subject details.

- **Question Bank Module:** Questions bank will have a program to add, modify and delete questions from subject. Here Examiner can upload questions and set valuation schemes and test duration. The questions have different attributes like subject, topic, marks, question text, options and the answer. The question can be text or image.

- **Results Module:** In this module students and examiners will get instant results. Results can also be printed as soon as the test finishes.

CHAPTER- 4

SOFTWARE DESIGN

📋🖱📂 USE-CASE DIAGRAM:

Figure 1: General Diagram

So the above diagram represents the point of view of the new user, the registered user, and the developer and the arrows to each module show the interactivity of the person.
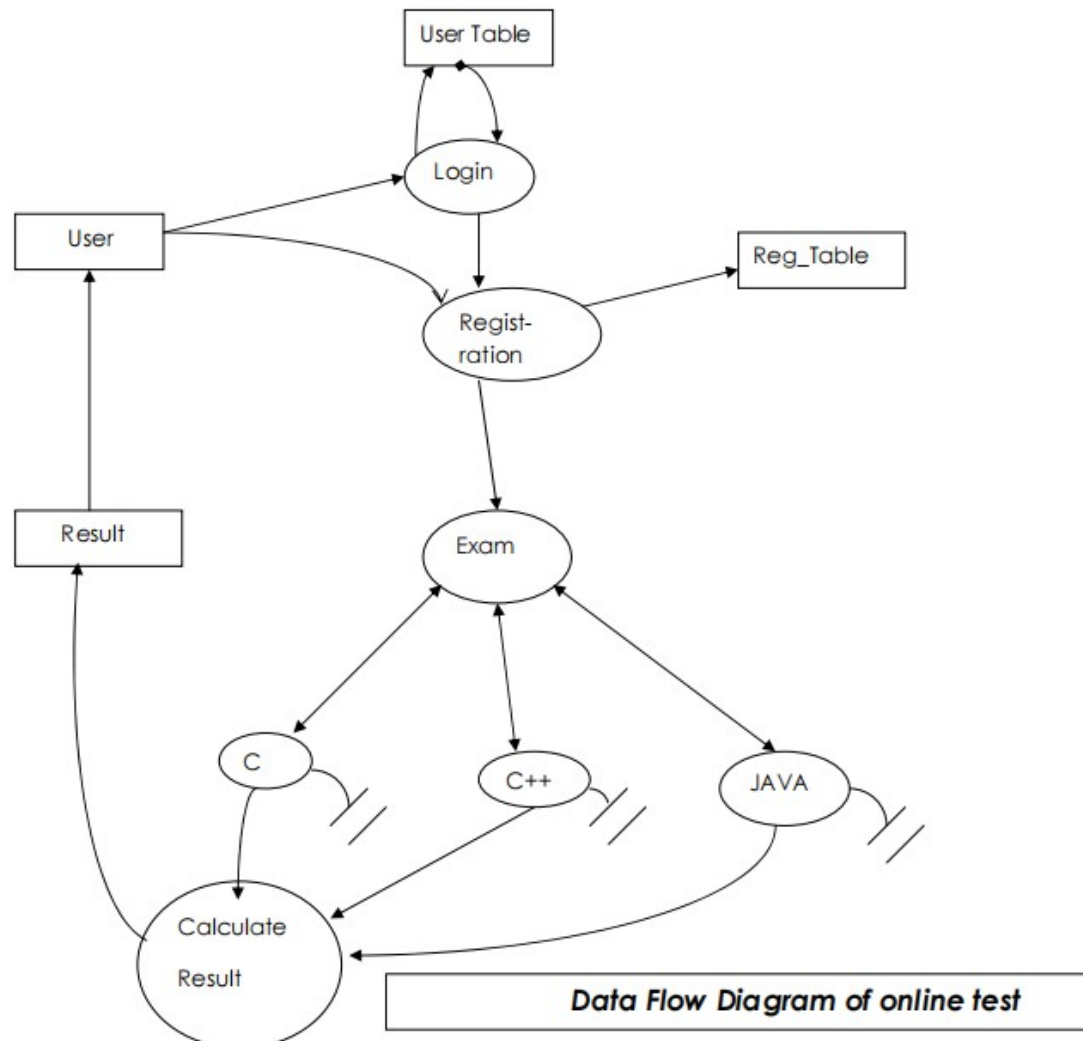
The New user will first be required to create up a new account so will interact with the "sign-up module" and fill up all the details that will be stored in the database. The next user will land into the dashboard where there will be "search bar" where the user can enter the Quize he

desires to read or any related keyword to the Quize. The list of Exams will appear on the screen and the new user will interact with "select the Exam" module. Then the user can interact with the "Start" module to Start the exam.

For the registered user, the user will be having the credentials to login and will interact with the "login module" and then the user will enter into the dashboard where there will be "search bar" where the user can enter the Exam he desires to practice or any related keyword to the Exam. The list of Exam will appear on the screen and the new user will interact with "Start Exam" module. Then the user can interact with the "Description of the Exam" module to read more about the Exam.

3.2 DATA FOW DIAGRAM

In order to fully use MySQL server technology, it is essential to make sure that the database is well designed. The files names chosen to label all the tables created within the database attempt to reflect the table's purpose and, therefore, contribute to well-design system. The intimal step in designing was to decide, according to the requirements and specifications of the project, which tables should be created, and what type of information each one should hold.

User Table

Login

User

Reg_Table

Regist-
ration

Result

Exam

C

C++

JAVA

Calculate

Result

Data Flow Diagram of online test

DATA TABLES

Admin Table:

S.No.	Field name	Data Type	Description
1.	User name	Text	Store user name for checking correct username
2.	Password	Text	Store password corresponding to username
3.	User Type	Text	User Type Administrator or User

Teacher Table:

S.No.	Field name	Data Type	Description
1.	Teacher Id	Number	Unique key for Every Teacher
2.	Teacher Name	Text	Name of Teacher

Attendance Table:

S.No.	Field name	Data Type	Description
1.	Student Name	Text	Name of Student
2.	Status	Number	Total number classes attended by particular Student
3.	Semester	Text	In which Semester Student is Studying
4.	Subject	Text	The Subject Wise Attendance Is maintained
5.	Month	Text	The Month Wise Attendance is maintained where total working days in month=20

Subject Table:

S.No.	Field name	Data Type	Description
1.	Code	Number	Subject code a unique key
2.	Subject Name	Text	Name of Subjects in all semester
3.	Semester	Text	In which Semester student is studying

Student Table:

S.No.	Field name	Data Type	Description
1.	Student ID	Number	This is the roll no of the student
2.	Student Name	Text	This is the name of student
3.	Course	Text	This is the course in which the students are studying .By default course is MCA
4.	Semester	Text	This is the semester in which Students are Studying. By default Semester is IV sem

CHAPTER - 5

TESTING

Once source code has been generated, software must be tested to uncover as many errors as possible before delivery. It is very important to work the system successfully and achieve high quality of software. Testing include designing a series of test cases that have a high likelihood of finding errors by applying software-testing techniques.

System testing makes logical assumptions that if all the parts of the system are correct, the goal will be successfully achieved. The system should be checked logically. Validations and cross checks should be there. Avoid duplications of record that cause redundancy of data.

In other Words, Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. It is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements.

The Android framework includes an integrated testing framework that helps you test all aspects of your application and the SDK tools include tools for setting up and running test applications. Whether you are working in Eclipse with ADT or working from the command line, the SDK tools help you set up and run your tests within an emulator or the device you are targeting.

There are different types of testing some of them are listed below:

6.1 Installation Testing:

There are two types of apps on an Android device i.e., Pre-installed applications and the applications which are installed later by the user.

For both of the above, installation testing is carried out by our teammates. It is ensuring smooth installation of the application without ending up in errors, partial installation etc.

6.2 Unit Testing

It focuses on smallest unit of software design. In this we test an individual unit or groups of inter related units. It is often done by programmer by using sample input and observing its correspondingoutputs. In this testing technique we are primarily focuses on

- Loop methods and function is working fine or not.
- Misunderstood or incorrect Arithmetic precedence
- Incorrect Initialization

Unit Testing of the app:

Test cases	Description	Expected Outcome	Result
1	Start Page – Launch Screen	Should display splash screen with animated text	Pass
2	Register Screen	Should display register activity where you need to fill the required details	Pass

3	Login Screen	Should display login screen And ask for your credentials.	Pass
4		Should Receive mail to reset the password	Pass
5	FAQ	Should display the Frequently asked question	Pass
6	View Favorites	Should display the Favourite activity	Pass

7	Profile	Should display the information that you have entered	Pass
8	View Quizes	View Home Page	Pass
9	Search bar	Should give the details of the quize that you have searched	Pass
10	View Description page	Should show the information of the displayed quize	Pass

11	Add to favourites	Should add the selected quize into the favourites	Pass
12	Clear Favourites	Should remove the selected quize from the favourites	Pass
13	Preview	Should display the preview of the quize	Pass
14	Logout	Sign out you from the app	Pass

Table 1: Unit Testing of Quizeopedia

6.3 User Testing

User testing is the process through which the interface and functions of a website, app, product, or service are tested by real users who perform specific tasks in realistic conditions. The purpose of this process is to evaluate the usability of that website or app and to decide whether the product is ready to be launched for real users.

This app was tested by our team mates and friends who are using different mobile phones (and having different android version) also tested on different emulator to check its performance and it seems to be working fine and users of this app are satisfied with the facilities and performance of the app and like the way how the app is worked.

6.4 Performance Testing

In this type of testing we have checked the performances of our application under some peculiar conditions are checked. Those conditions include:

- Low memory in the device.
- The battery in extremely at a low level.
- Poor/Bad network reception.

Performance is basically tested from 2 ends, application end, and the application server end. Our app is also performing well in this phase of testing as well. And we are getting positive feedback from user of our app.

6.5 Compability Testing

This application was tested and used on different devices like LG G3, Google Nexus 4. The application worked fine and is stable. The application worked fine in portrait mode and there isn't any problem with compatibility.

On all types of testing (that we have performed above) our performing well on our portal i.e. ExamRoom.

Conclusion

The On line test System is developed using Java and sql fully meets the objectives of the system for which it has been
developed. The system has reached a steady state where all
bugs have been eliminated. The system is operated at a high level of efficiency and all the teachers and user associated with the system understands its advantage. The system solves the problem. It was intended to solve as requirement specification.

Bibliography

https://www.w3school.com

https://www.geekforgeeks.com

Future Scope

Scope of this project is very broad in terms of other manually taking exams.
Few of them are:-

This can be used in educational institutions as well as in corporate world.

Can be used anywhere any time as it is a web based application(user location doesn't matter).

No restriction that examiner has to be present when the candidate

takes the test.