



**Tech Saksham**  
**Final Project Report**  
**TS- CC CAPSTONE PROJECT**  
**“ONLINE TEST GENERATOR SYSTEM”**  
**“DBATU Maharashtra (BTECH COMP)”**

ROLL NO	NAME
1930331245062	Miss Vidya Kale
2030331245070	Miss Janhvi Bhute
1930331245036	Miss Avantika Wathore

Guided By: Miss Rashmi Mishra

## **ABSTRACT**

There are many online platforms for multiple choice questions and for learning . There is lack of question bank on any website. This project provide the facility to student as well as teachers. It gives the question bank of every subject of every semester to the students .

As well as it contains

the multiple choice question of every subject . For the practice of student , it provide the timer for multiple choice question . For the teachers , it helps to take the continuous assesement of the student and evaluate it quickly. It saves the data of login and logout student so that professors can track the progress of student . Main motive is to provide the question bank according to the

DBATU syllabus and provide multiple choice test to the student

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## **CHAPTER 1 INTRODUCTION**

- **Overview**

- The 'ONLINE TEST GENERATOR SYSTEM' project will be developed to overcome the time
- consuming problem of manual system. Apart from that in current system, checking the answer
- sheets after taking test, waste the examiners time, so this application will check the correct
- answer and save the examiner time and carry the examination in an effective manner. The users
- which are use this system don't need to high computing knowledge and also system will inform
- them while entering invalid data.
- The aim of this project is to computerized the existing manual system and help the examiners to
- save their valuable time and important data. Apart from this, data which are exist in this system,
- will exist for long period of time and will be easy accessible. This project helps the examiners to
- manage their services in a good way and provide a better service to their users.
- The objective of this project is to manage the details of students, examinations, marks, courses
- and papers in a good manner. The performance of the application will be fully control by
- administrator and administrator can guaranty any one to access. The project will reduce the
- manual process in managing examinations and all issues regarding that.

### **Functionalities of the project will be as following:**

- Able the examiners to punch the MCQ questions online;
- Able the users to solve the questions online;

- Examiners can manage the information regarding exam;
- Correct answers will be evaluated by system (First it should be determining by examiner);
- Users can see their result after submitting the test.

To design and implement this project we plan that the project support to different types of users apart from its administrative part. When project is run for the first time it allowed the user to select as who he/she wants to login in the system. Project support login as teacher and login as student. If a user who is student, try to login as teacher system will not allow him and vice versa.

User who add as teacher in system will be able to punch test and questions to system and also will be able to observe the result of the student which attempt tests. User who login to system as student will be able to select a particular test and attempt questions depend on this test. After attempting the test and submitting that user will receive a message that you have attempt the test successfully and if the user tries to attempt the same test, system will not allow him/her. Also a user which login to system as student will be able to observe the result of test he/she attempt.

To conclude introduction, we have use these modules to follow the objectives of our project and each of these modules have logical connections to other modules which they are depend.

- ⌚ Index: Which allow users to select their type of login to system;
- ⌚ Teacher Login: Able the teachers to login to system with a valid user name and password.

If a teacher is successfully login to system, he/she will have access to following pages:

- ✓ Teacher Home: Which have information about Online MCQ Quiz and issues support by this system for the teachers;
- ✓ Punch Test: Which able the teacher to punch a test and after entering the test name and clicking on ⑥ Submit to Enter Questions ⑦, teacher will be able to add questions to the particular test.
- ✓ Students Marks: Which able the teacher to observe the result of all student who have attempt the tests;

⌚ Student Login: Able the students to login to system with a valid user name and password.

If student is successfully login to system, he/she will have access to following pages:

- ✓ Student Home: Which have information about Online MCQ Quiz and issues support by this system for students;
- ✓ Attempt Test: Which able the student to select a particular test for attempting from the existing test in system from drop down list and after clicking on ⑥ go to selected test ⑦, the questions of selected test will be displayed for the student to attempt. Than student will be able to attempt the questions and after submitting, student will receive a message that test is successfully attempt.
- ✓ Marks: Which able the particular students to have access to result of the test which he/she attempt.

### **Existing Systems :**

There are various MCQ quiz applications exist in the internet with different criteria. Each of the existing applications has their own goodness and problems. In this MCQ quiz application which is designed and implemented in JSP based we try to overcome the existing problems with following features:

- Remove source confuse issue.
- Better management.
- Probable sources of information for each document and report.
- Connection to database for better storing of data.
- Better frontend management.
- Better backend management.
- Try to decrease error issuer during runtime.

- **What is MCQ?**

Multiple-choice questions are deservedly popular — because they are easy to create, administer, and analyze. Multiple choice tests can be an effective and simple way to measure learning. Multiple choice questions can be assessed quickly, providing students with prompt feedback. In addition, well-written multiple choice questions can go beyond testing rote facts and may measure higher cognitive abilities.

Here's a quick multiple choice questions example...

❖ How are you feeling today?

Excited

Okayish

Sad

Angry

Multiple choice questions can also come in the form of surveys, polls and quizzes. The nature of the answer options, i.e., whether answers should remain single-select or multi select, largely depends on the discretion of the survey maker. The respondent then goes on to select one (or more) options from the multiple choices. Multiple-choice questions enjoy wide applicability and acceptance. This popular survey question type allows for a more intuitive and structured survey response leading to easy-to-analyze data Advantages:

## **Types of Multiple Choice Questions:**

Now that we've covered the base, one might wonder what the different types of multiple choice questions are.

There are broadly two types – single select and multiple select

- Single select multiple choice questions
- Multi-select multiple choice questions
- Dropdown menu multiple choice questions

- Star rating multiple choice questions
- Text slider multiple choice question
- Numeric slider multiple choice question
- Thumbs Up/Down multiple choice question
- Matrix table multiple choice question
- Rank order multiple choice question.
- Image/picture based multiple choice question

### **1. Single select multiple choice questions**

In these types of questions, the respondents can pick only one option among the predetermined options. These questions are very much effective in finding out a user's primary preference. Single-select multiple choice questions are closed-ended questions that help the respondents choose from options they might not have initially thought of.

### **2. Multi-select multiple choice questions**

In this type of multiple choice question, the respondents can choose more than one option. There are roughly two categories of multi-select multiple choice questions. Permuting multiple choice questions, where the selections are permuted each time they appear. Non-permuting multiple choice questions, where the selection order is static. The survey creator uses checkboxes for these questions, and the respondent chooses the most appropriate answers from the selection.

### **3. Dropdown menu multiple choice questions**



Another type of MCQ, dropdown, allows respondents to choose an answer from a list of choices presented in the dropdown menu. Depending on the use case, the survey maker can configure the option to let the respondent choose one or multiple options.

#### **4. Star rating multiple choice questions**

A star rating question is a type of multiple choice question that allows the user to rank attributes on a point-scale represented by the stars. It is essentially a five-point matrix question that allows for visual scaling; with the only difference being in the place of radio buttons or checkboxes, stars are utilized.

#### **5. Text slider multiple choice questions**

A good alternative to the open-ended questions, a text slider multiple choice question allows the respondents to answer on a text scale by dragging a slider. They drag the slider bar to select their desirable options, making it yet another convenient graphical rating question type.

#### **6. Numeric slider multiple choice question**

Similar to the text slider multiple choice question, in this question type, the respondent can answer the question by selecting values by dragging the slide through the range. This rating scale has proved particularly useful for allowing the survey makers to produce a more extensive range of questions involving numerical data.

#### **7. Thumbs up/down multiple choice question**

Set apart by their power of simplicity, this classic question type finds marks high attendance in most surveys. Primarily used to elicit respondents' opinions, the thumbs up/down question helps them to make a quick choice between what they like and dislike.

#### **8. Matrix table multiple choice question**

Matrix table questions are used when you need to combine multiple queries with the same answers. To put it simply, it is most useful when you need to ask multiple questions that should be rated on the same scale. Quite earnestly, a matrix question is nothing but multiple questions presented on a grid.

### **9. Rank order multiple choice question**

This multiple choice question lets the respondents order answer options as per their preference. This survey question type allows them to rearrange and rank multiple-choice options in a specific order, thereby evaluating multiple row items based on a specific format.

### **10. Image/picture based multiple choice question**

Another visual variety of multiple choice questions, a picture choice question, allows for visualization of the answer options. The respondents can then review and select the option of their choice. This survey question type is a boon in making your surveys or forms look dynamic and overall more engaging

## **What is Question bank?**

A question bank is a list of questions and answers used in an online exam or assessment. There may be a single question bank to test knowledge and understanding of a range of topic areas, or any number of separate question banks linked to specific topics. Traditionally, these assessments have been used to test a candidate's knowledge and understanding at the end of a learning module. Pass, and you complete the module or progress to the next step. Fail, and you typically have a chance to revisit course content and then take the test again.

The role of the question bank is, however, developing and they can now play a crucial role in creating engaging compliance training.

### **Benefits of Creating a Question Bank**

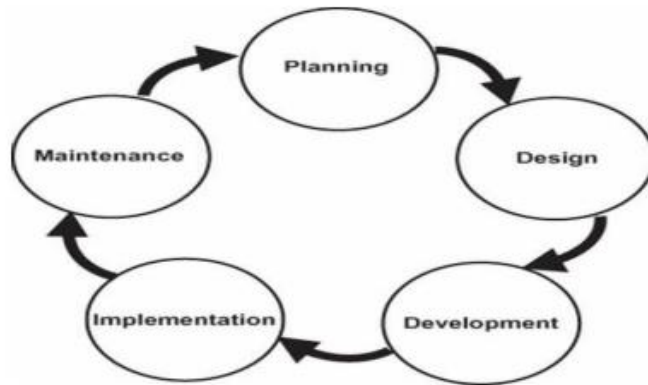
- ❖ There are certain benefits to creating a question bank. Suppose you want to create a question bank biology for the test taker. These are the benefits that creating a question bank will include.
- ❖ It is basically an organized and simple way to ensure the secure storage of questions to use in future quizzes.
- ❖ This method is efficient and convenient for creating online tests by simply picking out the number of questions you need from every single category.
- ❖ This enables the students to retake the test more than once. There will always be different questions included in the set when the test is repeated.
- ❖ The creation of a question bank also minimizes cheating since the pool of important questions is pretty large. It is less likely that the students will get the same questions in another set. Plus, the order of the questions will also be randomized.
- ❖ The inclusion of categories ensures that questionnaires are able to analyze as well as view the performance of the test taker according to the category that they choose. Hence, the question bank also helps in assisting with the development requirements of the test takers

## **Methodology**

The methodology of developing of project will be a step-by-step sequence to design, develop and deliver the application. In software engineering this methodology called ‘waterfall model’ which one portion of work follows after another in a linear sequence.

### **Following steps will be followed in this methodology:**

- Initiation (Requirement Specification);
- Planning and design;
- Execution (construction and coding);
- Validation (Testing);
- Closure (Installation and Maintenance).



SDLC Diagram of Project

- ⌚ We Created website--- Online Test Generator System.
- ⌚ The Technologies is used for Front-End:-Html,Css,Javascript.
- ⌚ Starting from layout page . It is created from HTML ,styling in CSS and input in JAVASCRIPT.
- ⌚ Where the navbars are fixed with the sections which are-Semester ,Subject , Exam , SignUp and SignIn.
- ⌚ Semester section is done for 1 to 8 where the respective subject html.file is attached.
- ⌚ Later on for Subject section for particular subject of 1 to 5 Units with their particular subjects of subject.html file where the file has it particular unit question bank .
- ⌚ Exam section consist of three section-Long answer ,MCQ and Short answer where this are in JAVASCRIPT and styled to particularly .So, while opening it there is a particular form which ask yours information such as, username, PRN, password to save the data in database.
- ⌚ Sign in and Sign up contains for registration and login there layout are in the form.

## **CHAPTER 2 APPLICATIONS**

### **Applications**

1. For Exam Preparation of Students where students can practice for there exams using the question bank and the tests.
2. For Creating Question Paper which is going to be very helpfully for teachers as they can take question from the website.
3. Students can practice before exam and the plus point is the timer so they will be well prepared before exam.
4. Time consistency.
5. Easy availability of question banks basically can say collage syllabus questions are difficult to find .
6. Instant Output of MCQ ,if teachers are willing to take the Cumulative Assessment

### **Advantage of MCQ**

The reason why this particular form of questions is so popular is that they are straightforward, and it doesn't require much effort from the respondent to answer the questions.

Other advantages include:

1. Results that are simple to analyze

Multiple choice questions allow you to organize and make sense of responses fairly quickly and efficiently. For certain problems and lines of inquiry, collecting quantitative data is a simple way to collect basic demographic information about customers.

2. Easy to complete on mobile devices

According to recent estimates, around one in five people complete surveys on mobile devices such as cell phones and tablets. Such devices tend not to come with a traditional keyboard, meaning it is rather easy for respondents to answer multiple-choice questions using a touch screen.

## **Disadvantage of MCQ**

Although multiple choice questions have their advantages, there are some significant limitations to be aware of. Disadvantages of using multiple choice questions include:

### **1. Manipulate the respondent to answer in a certain way**

This is one of the most common problems with multiple choice questions. When a question is presented with a defined set of answers, respondents may be forced to answer in a way they otherwise would not have.

The survey designer will provide options that he or she thinks are the most relevant ones for the question. However, in practice, those answers may not be the most obvious choice for the respondent. The respondent might have something else in mind. Since the respondent is limited to a set of predefined answers, the respondent may even skip the question or choose an answer that might not represent the truth.

### **2. Focused on collecting quantitative data**

Multiple choice questions are designed to produce quantitative data. This can be limiting if you want to find out about a customer's personal experiences with your company. Only collecting quantitative data will just give you an overview of how the responses are allocated, and you will not have any insights into why the result looks like it does.

### **3. Time-consuming to design**

Although multiple choice questions are fast to process, they can take up your precious time. This is because coming up with effective questions is trickier than it sounds, and it can be difficult to ensure you have covered every possible corresponding answer.

## **CHAPTER 3 TECHNOLOGIES USED IN PROJECT**

### **1)Front-End Web Technologies:**

The biggest challenge related to front-end web development is the continuous change in techniques and tools for developing the front-end of a website. As a result, the developer must constantly be updated with all developments. To select the best front-end technology, it is necessary to know the features of all the technologies. You are likely to be left stranded on an island. Hence, we are providing you with a list of 9 front-end technologies to leverage the performance of the business.

#### **➤ HTML:**

HTML stands for HyperText Markup Language. It is used to design web pages using a markup language. HTML is the combination of Hypertext and Markup language. Hypertext defines the link between web pages. A markup language is used to define the text document within the tag which defines the structure of web pages. This language is used to annotate (make notes for the computer) text so that a machine can understand it and manipulate text accordingly. Most markup languages (e.g. HTML) are human-readable. The language uses tags to define what manipulation has to be done on the text.

HTML page structure: The basic structure of an HTML page is laid out below. It contains the essential building-block elements (i.e. doctype declaration, HTML, head, title, and body elements) upon which all web pages are created.

#### **Features of HTML:**

- ⌚ It is easy to learn and easy to use.
- ⌚ It is platform-independent.
- ⌚ Images, videos, and audio can be added to a web page.

- ⌚ Hypertext can be added to the text.
- ⌚ It is a markup language.

### **Why learn HTML?**

- ⌚ It is a simple markup language. Its implementation is easy.
- ⌚ It is used to create a website.
- ⌚ Helps in developing fundamentals about web programming.
- ⌚ Boost professional career.

### **Advantages:**

- ⌚ HTML is used to build websites.
- ⌚ It is supported by all browsers.
- ⌚ It can be integrated with other languages like CSS, JavaScript, etc.

### **Disadvantages:**

- ⌚ HTML can only create static web pages. For dynamic web pages, other languages have to be used.
- ⌚ A large amount of code has to be written to create a simple web page.
- ⌚ The security feature is not good.

### **➤ CSS**

Cascading Style Sheets, fondly referred to as CSS, is a simply designed language intended to simplify the process of making web pages presentable. CSS allows you to apply styles to web pages. More importantly, CSS enables you to do this independent of the HTML that makes up each web page. It describes how a webpage should look: it prescribes colors, fonts, spacing, and much more. In short, you can make your website look however you want. CSS lets developers and designers define how it behaves, including how elements are positioned in the browser.

### **Why CSS?**

- ⌚ CSS saves time: You can write CSS once and reuse the same sheet in multiple HTML pages.
- ⌚ Easy Maintenance: To make a global change simply change the style, and all elements in all the webpages will be updated automatically.
- ⌚ Search Engines: CSS is considered a clean coding technique, which means search engines won't have to struggle to read its content.



- ⌚ Superior styles to HTML: CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
- ⌚ Offline Browsing: CSS can store web applications locally with the help of an offline cache. Using this we can view offline websites.

### ➤ **Bootstrap:**

Bootstrap is a framework which uses HTML, CSS and JavaScript for the web design. It is supported by all the major browsers e.g. Firefox, Opera and Chrome etc. Further, Bootstrap includes several predefined classes for easy layouts e.g. dropdown buttons, navigation bar and alerts etc. Lastly, it is responsive in nature i.e. the layout changes automatically according to the device e.g. mobile or laptop etc.

Bootstrap is a free and open-source collection of CSS and JavaScript/jQuery code used for creating dynamic websites layout and web applications. Bootstrap is one of the most popular front-end frameworks which has really a nice set of predefined CSS codes. Bootstrap uses different types of classes to make responsive websites. Bootstrap 5 was officially released on 16 June 2020 after several months of redefining its features. Bootstrap is a framework that is suitable for mobile-friendly web development. It means the code and the template available on bootstrap are applicable to various screen sizes. It is responsive for every screen size. The framework is free and can be used in 2 ways that are either by downloading the zip files and including libraries/ modules of bootstrap in the project or directly including the URL of bootstrap and using the online version.

## **Backend Web Technologies:**

### ➤ **Javascript:**

JavaScript is a lightweight, cross-platform, and interpreted compiled programming language which is also known as the scripting language for webpages. It is well-known for the development of web pages, many non-browser environments also use it. JavaScript can be used for Client-side developments as well as Server-side developments. Javascript is both imperative and declarative type of language. JavaScript contains a standard library of objects, like Array, Date, and Math, and a core set of language elements like operators, control structures, and statements.

## Features of JavaScript:

According to a recent survey conducted by Stack Overflow, JavaScript is the most popular language on earth. With advances in browser technology and JavaScript having moved into the server with Node.js and other frameworks, JavaScript is capable of so much more. Here are a few things that we can do with JavaScript:

- 🕒 JavaScript was created in the first place for DOM manipulation. Earlier websites were mostly static, after JS was created dynamic Web sites were made.
- 🕒 Functions in JS are objects. They may have properties and methods just like another object. They can be passed as arguments in other functions.
- 🕒 Can handle date and time.
- 🕒 Performs Form Validation although the forms are created using HTML.
- 🕒 No compiler is needed.

## ➤ Python:

The versatility of Python is one of the key reasons for its popularity. You can use python for a variety of applications such as Machine Learning, Data Science, image processing, mobile application development, and many more. With the versatility of the language, it makes it easier for developers to build backend development python.

### ✓ Exceptional Framework:

Python is the only programming language that offers a structure for the developers. For Python backend development, Django and Flask are the most popular python web frameworks. Django holds the topmost position in Python's framework. The striking part is it is effortless to use and reliable. The stability and the robustness of Django make the developers the first choice while developing backend software in python. Till you are in confusion then check the best python frameworks for web development.

### ✓ Improves speed:

Python is not only one of the most popular programming languages along with other languages such as C++ and Java but also allows for quick prototyping and iterations with minimal investment of time and money. We all are acquainted that Python works adequately for precursors. Python provides you with a fast return on investment in the case of both startups or reputable businesses.

### ✓ Small learning curve:

Python is the language that can be formed into a long-lasting and stable relationship. The users who use Python are thankful for its growing popularity and with a large community of developers, it is being used as the programming language for backend development. You can also get the video tutorials which are helpful for you to upskill your knowledge of python.

#### ✓ The Final Thought

With lots of advantages and its growing popularity among developers, python is the first choice for developers who are looking for backend development. Backend development using python improves the efficiency of product development. Whether you are a business owner with a startup, python can be used for developing projects.

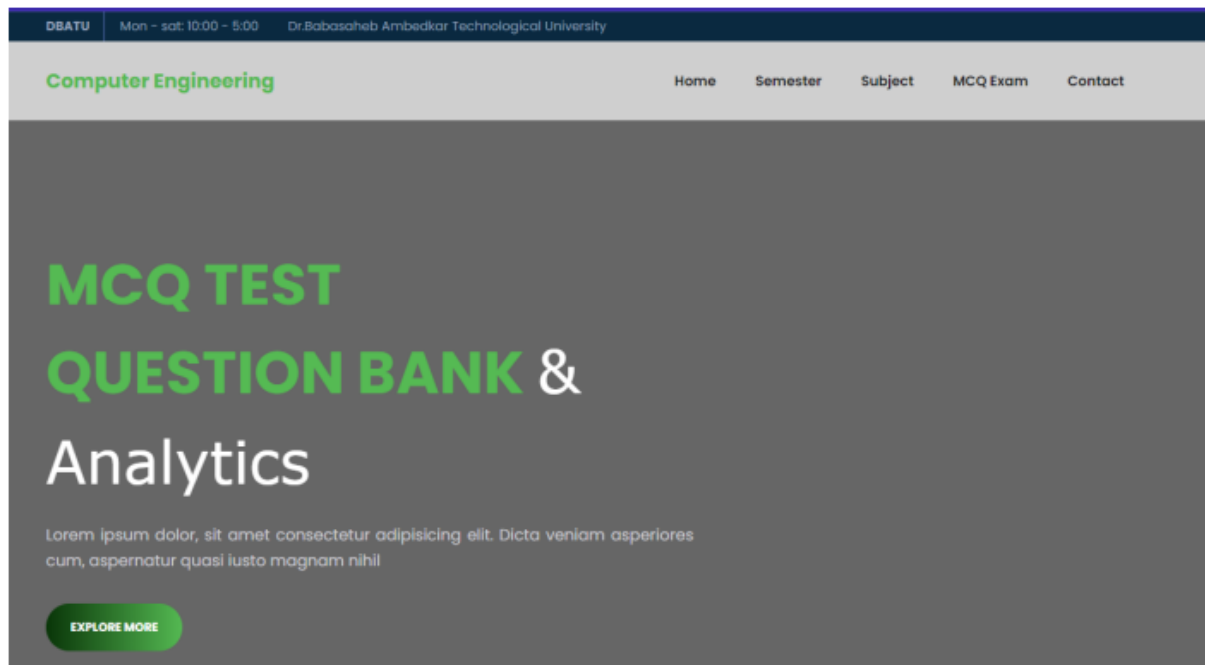
#### **Challenges And Issues:**

- ⌚ Camera Issues is a huge problem because collage computer labs do not have the system right now.
- ⌚ No instant output in descriptive question, as it needs teachers outcome because students can have different descriptive answers.
- ⌚ Need continuous internet connection and if the connection loss it can be the loss of student as they have to appear again.
- ⌚ Everyone should have a device, without it is not possible.
- ⌚ Not flexible and Scalable.
- ⌚ Repetition of question may occur also after applying algorithms.

## CHAPTER 4 : PROJECT DESIGN

For designing and implementing of Online MCQ Quiz application we used HTML, CSS, JavaScript and SQL Server with the context of Java and JSP. Following pages have been designed using HTML, CSS and JavaScript to handle the defined objective of this project.

1. Index: This the first page which user observe after running the project. This page will able the user to select the type of login. Selecting “Login as Teacher” will direct the user to Teacher Login Page and selecting “Login as Student” will direct the user to Student Login Page



2. Login Pages: Login page exist for both teachers and student. After user select the type of login from figure 2, the login page of particular user will be displayed. Users enter their user name and password and after clicking on login first system will check is it a valid user or not. If user is authenticated by the system, will be directed to particular Home Page and if not authenticated by the system the message “Either user name or password is incorrect” will be displayed to user.

3. MCQ page : It contains mcq related to all subject of choosen semester .After sign in student can take the mcq exam with timer and get the score immediately. It provide the wrong mcq answer so that student can

check which one is wrong.

**Software is defined as**

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- ☐ set of programs, documentation & configuration of data
- ☐ set of programs
- ☐ documentation and configuration of data
- ☐ None of the mentioned

Submit

4. Subject page : In front page , there are all engineering semester . According to the student , they can select the semester from that and the subject page will be open . It contains the unit wise the syllabus . After opening every unit it shows the question on that syllabus and the page which is directing to the mcq of all the syllabus.

## Read And Write

QUESTIONS

**UNIT 1**

Introduction:

comments

**UNIT 2**

Programming/Coding/  
Software Construction:

comments

**UNIT 3**

DevOps:

comments

5. Question page:

According to the syllabus , every subject contains the question according to the unit wise syllabus .

**Future Scope :**

As mentioned the project is on java platform which is coded in NetBeans IDE with help HTML, CSS and JavaScript and running as web page by Apache Tomcat web server. But this project is only for MCQ test but in the future we have plan to extended it to support subjective type of questions with more functionality. We will add Administrative part on it which able the system

to delete test, add user, delete user and so on graphically vie the web. To conclude, this is a simple Online MCQ Quiz which able a teacher to punch MCQ question to system which will be store in SQL Server database and able the student to attempt any test for once. The marks of student will be calculated according to questions they attempt and will be displayed by the system to teachers and student

## **Conclusion:**

This technology is going to make easy work for the teachers and well as students. Such as, offline exams is going held in online mode .No creation of hardware copy for Cumulative Assessment and Mid Semester Exams. There is availability of question bank for each of semester and there respective subject. Creating databases for particular student who took the exam with filling up the form also database for sign in and sign up. By using random algorithm , teachers can take randomly questions for there paper. For avoiding repetition , Problem solving is used .

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