

# **ONLINE QUIZ APPLICATION**

Project report submitted in partial fulfillment of the requirement for the degree  
of Bachelor of Technology

in

**Computer Science and Engineering/Information Technology**

By

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Under the supervision of

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to



Department of Computer Science & Engineering and Information Technology

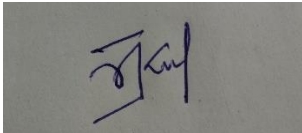
**Jaypee University of Information Technology Waknaghat, Solan-173234,  
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## **CERTIFICATE**

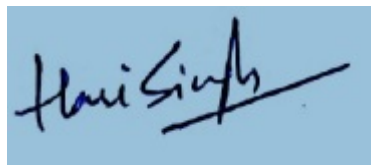
### **Candidate's Declaration**

I hereby declare that this submission is our own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

Mukul Sharma(161256)

A rectangular box containing a handwritten signature in blue ink. The signature appears to be 'Mukul' with a stylized flourish.

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

A rectangular box containing a handwritten signature in blue ink. The signature reads 'Hari Singh' with a long horizontal stroke underneath.

Dr Hari Singh  
Assistant Professor (SG)

Department of Computer Science  
& Engineering and IT

## **ACKNOWLEDGEMENT**

I would like to place on record my deep sense of gratitude to Dr Hari Singh for his generous guidance, help and useful suggestions.

I also wish to extend my thanks to my friends and colleagues for their insightful comments and constructive suggestions to improve the quality of this project work.

Mukul Sharma(161256)

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## **ABSTRACT**

Web in simple terms means a network of Internet servers that are ready to support some formatted documents and can be accessed by a web browser. About these formatted documents these are formatted in HTML (Hypertext mark-up language). Not these formatted documents create their links to their type but they also support links to some documents including video, graphics and audio files. Terms Web and Internet are interchangeably used but they are not same. While Internet refers to global network of servers that makes sharing of information, Web is the collection of information being accessed via Internet. Also, we can say that Web is a service and Internet is an infrastructure where web is a service on top of it. Alternatively, we can say Web is just a portion of the Internet. This project deals with use of web technology in the field of e-learning. Nowadays e-learning platform are encouraged as lot of manual work is not done and also it helps in saving time. People anywhere in the world with an internet connection can easily use these platforms. Not only in this field but anyone connected to an internet connection can use internet from any place in the world to shop online, pay bills, read books or newspaper, book movie tickets, reservation of buses or railway and many more.

# Chapter 1

## Introduction

### 1.1 INTRODUCTION

This project deals with use of web technology in the field of e-learning. Nowadays e-learning platform are encouraged as lot of manual work is not done and also it helps in saving time. People anywhere in the world with an internet connection can easily use these platforms. Not only in this field but anyone connected to an internet connection can use internet from any place in the world to shop online, pay bills, read books or newspaper, book movie tickets, reservation of buses or railway and many more.

Although the project is not exactly about teaching or studying but it is about testing students' knowledge on particular topic with the help of some objective type questions with some options. Though some set of questions cannot completely judge anyone's knowledge but this project aims to help students to evaluate themselves so that when after studying any particular topic they can correlate their concepts and some concepts that were not clear to them or those one which they have skipped can be presented to them in the form of questions by their teacher. Thus, teacher can also know about which concepts he or she should focus on as students are more often to give wrong answers on it.

To build the web application JSP technology is used with HTML and CSS with it. JSP stands for Java Server Pages which is a server-side technology for programming. JSP enables the creation of dynamic (to be built on run time) and platform independent method for building various Web-based applications. With the help of JSP we can access a wide variety of Java APIs which also



include JDBC API to access databases. JSP have extension .jsp. Like Servlet, JSP files also need to be executed on a web server. In simple terms we can say that HTML + Java is JSP which implies that a JSP file have both HTML and Java code.

## **1.2 Problem Statement**

The objective of Online Quiz application is to facilitate user friendly platform by reducing the manual effort. In past days we have seen that quiz were taken manually but with rise of technology we are able to conduct them and generate scores automatically. Especially in the time of this pandemic use of such applications is highly appreciated as schools and colleges are very much affected.

## **1.3 Objective**

The main objective of this Online Quiz Application is to provide an online platform for both teachers and students so that teacher can take various tests or assignments in the form of quiz and students after going through a concept can assess him/herself by the quiz questions being uploaded by teacher thus also reducing the manual paper work.

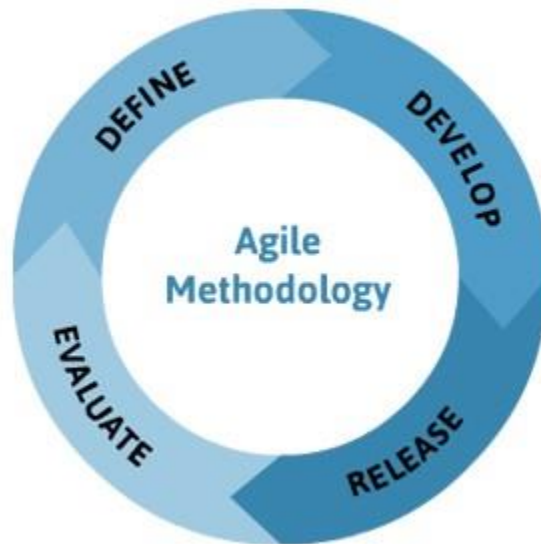
The project presents the following features:

- Making of a quiz.
- Taking of quiz.

- Registration of teachers and students.
- Any type of queries from users.

## 1.4 Methodology

The methodology used in this project include repetition of design, code and implementation then testing and analyzing the result. Further when repeating the phases again, new functionalities are added to the project. This methodology is called agile methodology.



For example, while creating the basic structure and less of focus on creative interface first iteration of the phases was done. After evaluation in each cycle more focus on interface and debugging was done.

## **1.5 Organization of Report**

Chapter 1 gives a general introduction about the JSP

Chapter 2 gives the literature survey related to Java Server Pages, HTML, CSS and other technology used.

Chapter 3 deals with how the various design and development.

Chapter 4 deals with the type of model used for making the product and what are the performance of the product and how can further improvement be made on that product

Chapter 5 finally conclude this report with a conclusion and also specifying the future vision for the product

## **CHAPTER 2**

### **Literature Survey**

Web in simple terms means a network of Internet servers that are ready to support some formatted documents and can be accessed by a web browser. About these formatted documents these are formatted in HTML (Hypertext mark-up language). Not these formatted documents create their links to their type but they also support links to some documents including video, graphics and audio files. Terms Web and Internet are interchangeably used but they are not same. While Internet refers to global network of servers that makes sharing of information, Web is the collection of information being accessed via Internet. Also, we can say that Web is a service and Internet is an infrastructure where web is a service on top of it. Alternatively, we can say Web is just a portion of the Internet.

Particularly whenever a client surfing web makes a request to web server, it first find resources and then sends some return response in HTML to the browser and a web browser know how to display them to client. Web pages are the documents written in HTML which provides meaning and some structure to any web content and collection of these web pages is called a website which consists of static files. A web application however is same as a website but with dynamic functionality like where user can manipulate the restricted data. A website seems to be too informational while a web application is interactive. User spend more of its time reading, listening or viewing a website but in a web application like social media applications where user spend a lot of interaction or banking application that performs

transactions on customer's input. Authentication can also be a point of difference between website and web application. Since in a web application, interaction of user is high and manipulation of data is there, therefore user accounts must be secured in order to prevent unauthorized access and any leakage of sensitive data. Most of the web application requires authentication but for the informational websites it is not obligatory. An example for this can be that while reading any news or article you don't need to go through any authentication process but to comment on it that includes interaction you have to go through a log in process.

**HTTP** which is Hypertext Transfer Protocol is a set of protocols that is used by clients and servers to communicate on web. HTTP protocol defines how messages are to be formatted and transmitted between client and the server and what actions should be taken by Web servers and browsers in response to various commands. Basically, HTTP is a TCP/IP based communication protocol, that is used to deliver data which includes HTML files, image files, query results, etc. on the World Wide Web. HTTP is the foundation of data communication for the World Wide Web since 1990.

HTTP represents Hyper Text Transfer Protocol. WWW is about correspondence between web customers and servers. Communication between customer PCs and web servers is finished by sending HTTP Requests and accepting HTTP Responses

- A client (a program or browser) sends a HTTP request to the web
- A web server gets the solicitation
- The server runs an application to process the request
- The server restores an HTTP response.
- The client gets the response.

HTTP is a simple and powerful protocol because:

- **Connectionless:**

An HTTP client which might be a browser will initiate an HTTP request to the server. The server processes the request and sends a response back after which client disconnect the connection. In this way we can say that client and server only know about each other only during the current request is initiated and response is received. For further requests new connection is made like client and server are new to each other.

- **Media Independent:**

It means, any type of data can be sent by HTTP as long as both the client and the server know how to handle the data content.

- **Stateless Protocol:**

By Stateless Protocols we mean the type of network protocols in which Client send request to the server and server response back according to current state. For the execution of server response, it does not require the server to retain session information or a status about each other.

Some examples of Stateless Protocol are

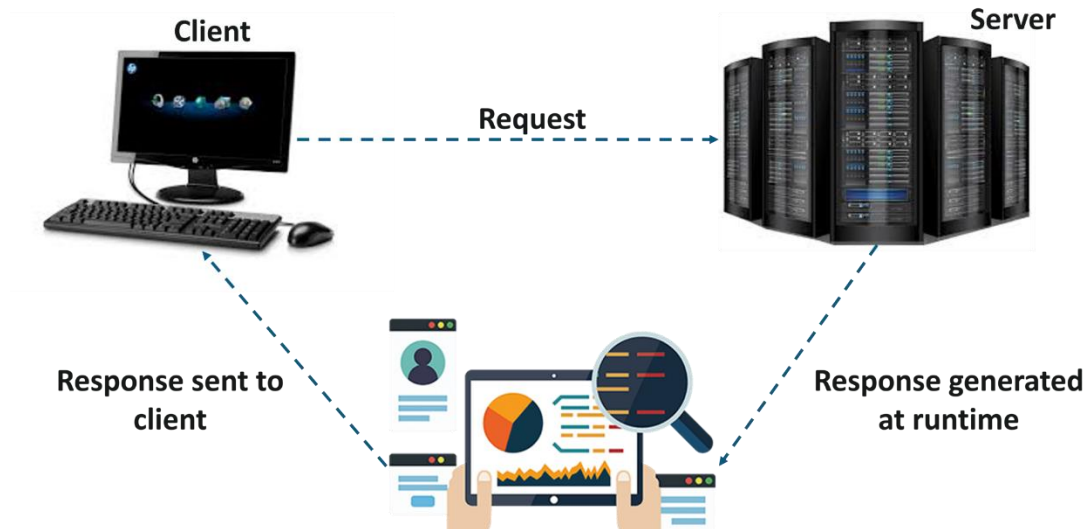
HTTP (Hypertext Transfer Protocol), UDP (User Datagram Protocol), DNS (Domain Name System)

As HTTP is connectionless and it is because HTTP is a stateless protocol. Each command is executed independently, without any knowledge of the commands that came before it. The server and client are known about each other only during a particular request. After execution of that request/response both of them forget each other.

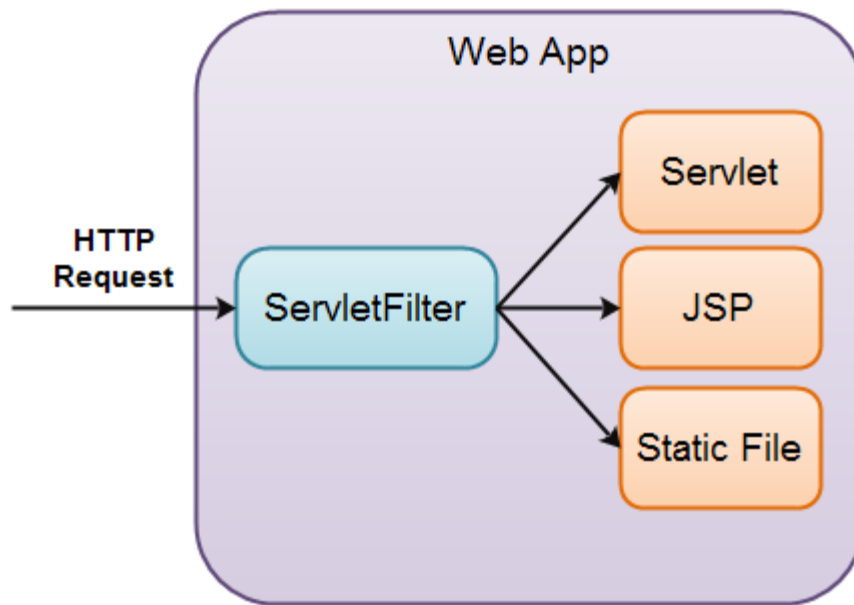
## **Servlet**

Servlet can be defined in different ways. In simple language we can say that it is a

technology which resides on the server side and is used to create web application. Because of the Java language it is robust and scalable.



It is also an API which provides many different classes as well as interfaces. The most important feature of servlet is that it extends capabilities of the server thus creating dynamic web pages. They are also able to handle complex requests that is obtained from the web server.



When a client requests a file from the server then the server can respond in two ways. If the file that the client is asking is static then it is already built. Server will already have that file and send it in response. But in case the file that client seeks for is dynamic then it has to be built during run time. In that case server goes to a helper application called Web container that contains servlets which is a java file that which take request and process it and provides response in form of an HTML page. Some examples of Web containers are Apache Tomcat, Glassfish, Web spheres etc. But requesting an Html file and in response of it using a java file i.e. a servlet can't be done without the help of a special file within the web container. This file is called Deployment descriptor which is a web.xml file. This file provides a mapping that for which request which servlet should be called.

Servlet is a class which extends HttpServlet which provides many different features to the class and some of them include taking request from the client, processing of the request etc.

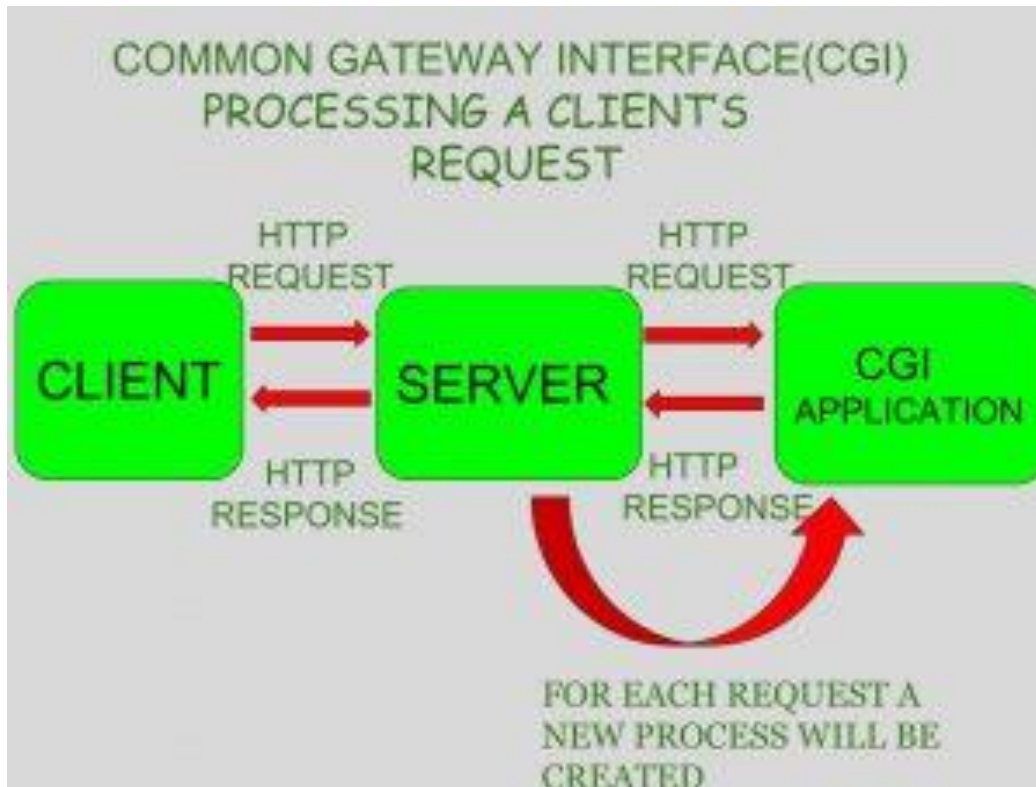
### **Execution of Servlets:**



In the execution of Servlets following are some of the basic steps:

- The clients send the request to the web server.
- A request is received by the web server
- The request is intercepted for static (html files) or dynamic files.
- If dynamic, the request is passed to the corresponding servlet.
- The servlet processes the request and provides a response.
- The servlet sends the response back to the web server and the web server sends this response to the client.
- Finally, the browser on client side displays it on the screen

## **CGI vs Servlet**



The use of Servlet is like other Web server expansions, for example, Common Gateway Interface (CGI) contents and Hypertext Preprocessor (PHP). In any case, Java Servlets are increasingly adequate since they understand the impediments of CGI, for example, low execution and low degree versatility. Before Servlets we had CGI (Common Gateway Interface) and it was utilized as a standard route by the internet browser to send client's solicitation to Application Program and get a response from it. Information is passed to and fro among server and application. CGI is really an outer application which is composed by utilizing any of the languages like C or C++ and this is liable for preparing customer requests and producing dynamic web pages.

In CGI whenever any request is made by the client for the dynamic Web pages, following operations are performed by the Web server:

- Firstly, it tries to find the web page that is requested.
- A new process is created to handle the client's request.

- Web server then invokes the CGI application within the process and the information is further passed to the server.
- Gathers the response from CGI application.
- Annihilates the procedure, readies the HTTP reaction and sends it to the customer.

Thus, we can draw an inference that in case of CGI, for each request process has to be created and destroyed each time by the server. So, for handling a smaller number of clients this technology seems fair but if number of clients increases more time will be required to handle the requests and thus it also increases burden on the server.

The CGI and Servlet are the projects which live inside the web or application server and helps the correspondence between the web server and the client to create the web content powerfully. CGI and servlet can be separated in light of the fact that they work in various habits and have particular usefulness and highlights. Following are some key differences between CGI and servlets which also indicates that why Servlets are more often used as compared to CGI (Common Gateway Interface)

	Servlet	CGI(Common Gateway Interface)
<b>Data Sharing</b>	Possible	Not Possible
<b>Cost</b>	Less Expensive	More Expensive
<b>Cookies</b>	Can be Handled	Cannot be Handled
<b>Portability</b>	Portable and Efficient	Not Portable
<b>Speed</b>	Faster	Slower
<b>Platform</b>	Do not depend on platform	Platform Dependent

<b>Dependency</b>		
<b>Error Handling</b>	Easy	Not much powerful
<b>Process Creation</b>	Processes are created according to the client's request type.	For each client request a separate process is created
<b>Security</b>	Attacks can be resisted	More vulnerable

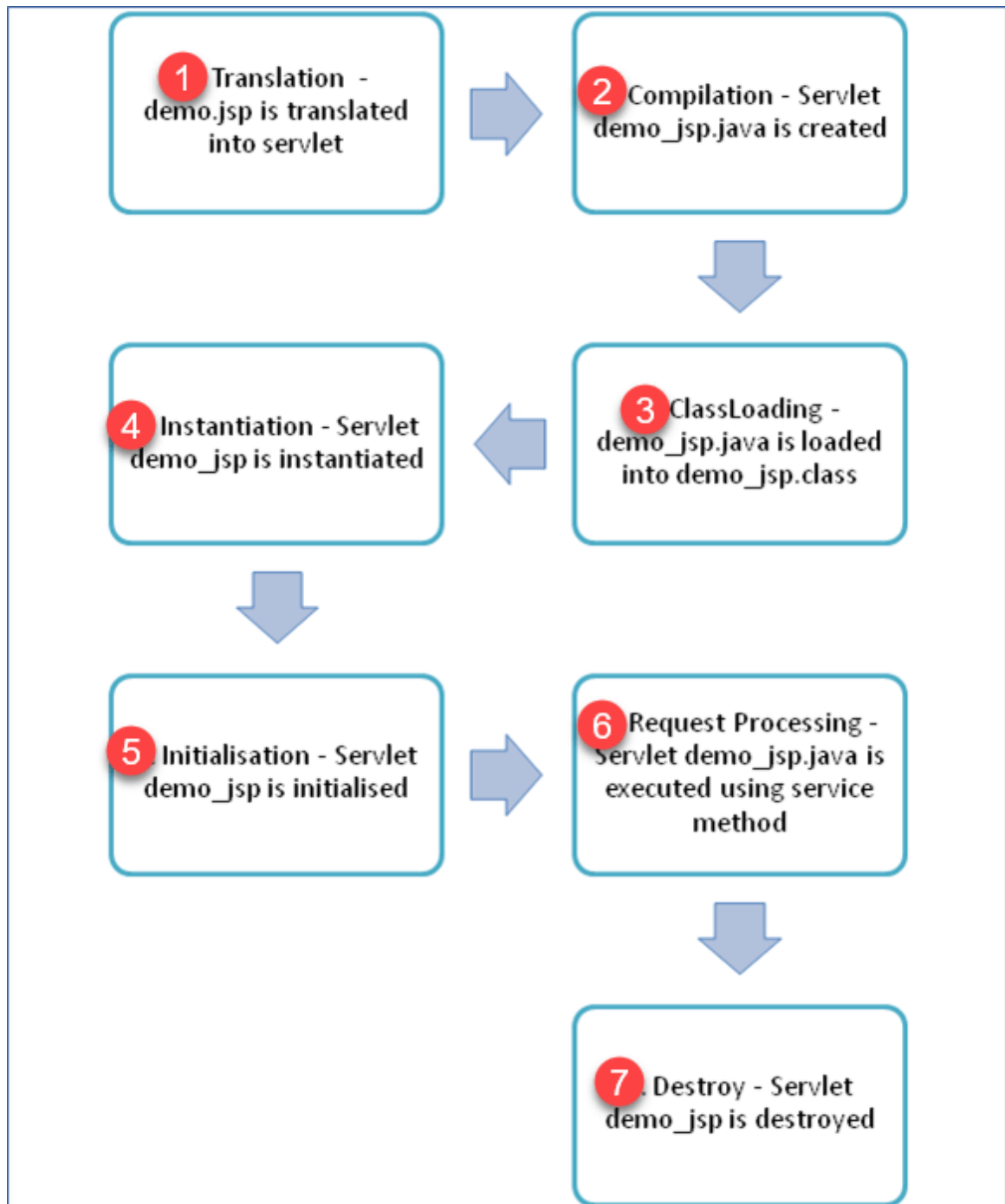
### JSP vs Servlets

Developed by Sun Java Server Pages is a type of text document and contains text in static and dynamic form. The static data comprises of text-based format including HTML, XML files and to express the dynamic content JSP elements can be used. While servlet acts like an intermediary between the request being sent by the client and application on server side, JSP is simply a text document. There are many different reasons why JSP is used which are shown in the following table but some of the very prominent among them is that it becomes easier to code when creating html file dynamically through JSP. For example, we have to change background colour of the web page using servlet that is a .java file we have to write out HTML code for changing background in println () statements and for more such modifications it might become a tedious job. In JSP we write our java codes inside html. The java code is written inside the delimiters which identifies that this part of the text inside the body of html code of .jsp file is actually a java code. But in a web container we cannot run JSP. The JSP get converted into servlets and that is why we must have knowledge of servlets to further work in JSP.

Point of Difference	Servlet	JSP
Implementation	Servlets are written in	Jsp which is primarily a

	Java and .java is created	text document is written in HTML and Java code is written inside the html tags
Type of requests	Can process protocol requests of all type	But JSP can process only in HTTP request.
Performance	Faster	Slower
Ease in writing Code	Hard	Easier in comparison with Servlets
Session Management (Handling of multiple requests)	By default not enabled	Automatically enabled.
Modification	Time Consuming	Much Faster
MVC (Model-View-Controller) <ul style="list-style-type: none"> <li>• Model-&gt;Data</li> <li>• View-&gt;User Interface</li> <li>• Controller-&gt;Process that handle input</li> </ul>	As servlet accepts a request and sends a response we can say that in MVC we can view Servlet as a <b>Controller</b>	Jsp provide the response that is sent by the servlet so it plays the role of <b>View</b> .

## Java Server Page Life Cycle



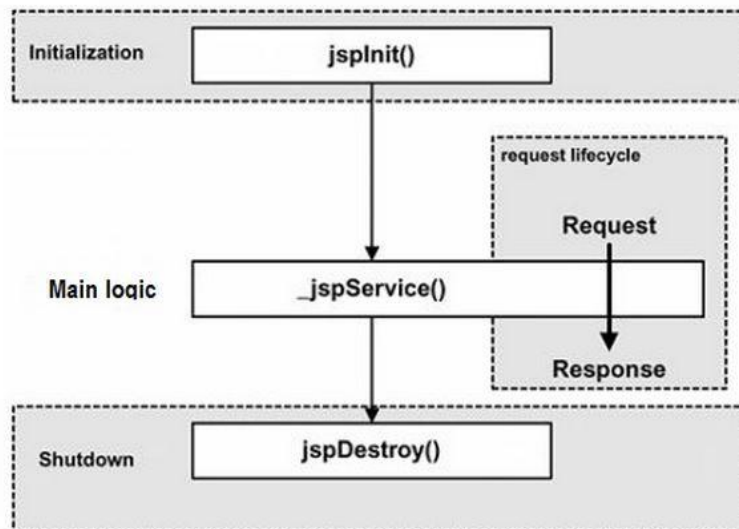
Life cycle of JSP is somewhat very similar to that of the servlet. But there is an extra step involved in Life cycle of JSP which is that JSP pages are compiled into servlet pages.

- ❖ Firstly, the Jsp page is translated in the **Translation phase**.
- ❖ As discussed, an additional phase is involved in the Jsp life cycle i.e. **JSP Compilation**. If the JSP has never been compiled into a servlet then this is done in this phase. Compilation includes 3 main steps:
  1. Parsing the JSP:

In this step, the syntax of the jsp file is verified. Also, various packages, classes and interfaces are verified.
  2. Converting the jsp into the servlet:

JSP page is processed into the servlet in this step.
  3. Compiling the Servlet program.

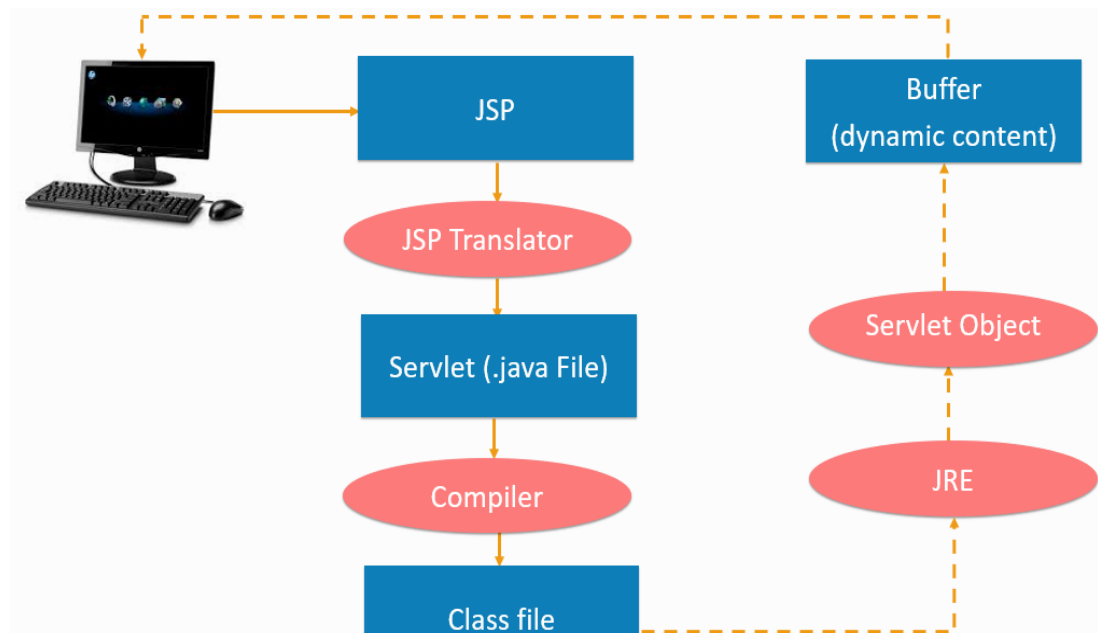
After this compilation is done an `_jsp.java` file(`nameOfThefile_jsp.java`) is created.
- ❖ Then comes the **Classloading phase** in which a `.class` file of the similar name is generated.



- ❖ **Instantiation Phase:** As the name is itself saying the object creation is done in this

phase for the servlets that are generated in the initial phases.

- ❖ Next is the **Initialization Phase** in which the .jsp file is initialized and jspinit () method is called. This method is called before any request is served.
- ❖ Then comes the Jsp Execution or the **Request Processing Phase** which involves the main Logic where request is processed and sent in the form of response to the client. The \_jspService () method is called by the jsp engine during this phase. This method takes HttpServletRequest and HttpServletResponse as the parameters which is similar to Service () method of servlet.
- ❖ When we are done with response the JSP needs to be destroyed which is done under the **Shutdown phase** or the Destroy phase. The jspdestroy () method is used in this phase and is equivalent to destroy method of servlet.





## **Why JSP and its advantages?**

Java server pages and common Gateway interface (CGI) serves the same purpose but JSP offers many other advantages as compared to CGI:

- Performance:

JSP performs better as it allows embedding Dynamic elements in an HTML file while CGI creates separate files.

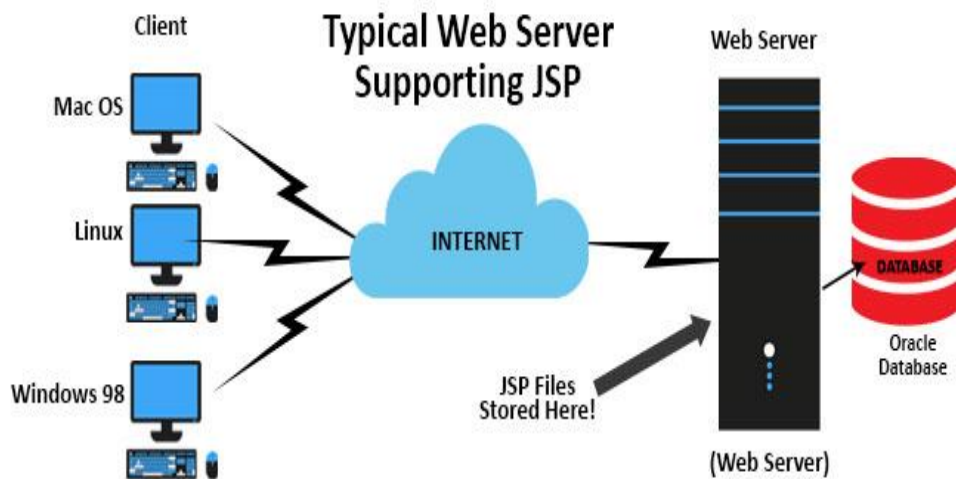
- Compilation:

Before Java Server Pages are processed, they need to be compiled unlike CGI which need an interpreter to be loaded by the server.

- It is much more convenient to write HTML statements than to write multiple println statements in any programming language and then generate HTML statements through it.
- While comparing it with JavaScript, later can generate HTML dynamically on the client side but difficulty arises while interacting with the web server and perform tasks like accessing a database.

## **Java Server Page architecture:**

To process the JSP pages we need a JSP engine in a web server. The JSP container is responsible for dealing with the request made by the JSP pages as the JSP container provides an environment for its execution in the run time and also the other services needed by JSP.



To create a webpage using Java Servlet Pages, firstly a web server identifies whether the HTTP request is for JSP page or not. If the URL ends with .jsp instead of .html then it is sent to the JSP engine.

The JSP page is loaded from the disk by the JSP engine and is further changed into a servlet content. In this conversion the templet text changes to `println ()` statements and all JSP elements to Java code and thus the dynamic behaviour is achieved as the code is implemented.

Then the servlet component is compiled into an executable class and the original request is further sent to servlet engine. the servlet engine loads the Servlet class and executes it during which an output is produced in HTML format.

The output which when passed to web server by servlet engine within an HTTP response and the web server helps in forwarding the HTTP response in static HTML content.

Finally, the web browser handles the dynamically-generated HTML page inside the HTTP response and we see the output exactly as if it was a static page.

Some other literary works were also studied, some of them which were not covered are as following:

**Developing dynamic website using an online website builder that is Weebly for Viking Fortune** [Md. Shamsul Arafin Yi Jiang]- Laurea University of Applied Sciences

After reading this literature we learnt about how a web site is not just an platform to share videos, blogs, article but also a marketing tool. Also, the words web pages and websites which are sometimes used as same are not exactly same but website in fact is collection of the web pages. It has also elaborated the difference between static and dynamic web pages. Since the arrival of Internet how website have turned out to be an important thing in field of business. Customer now expects in terms of performance, services, price and many other functionalities as e-commerce has been introduced. Creation of website for any organization helps it to have better connectivity with their clients for better knowledge of client's expectation, their feedback and providing them product and service description.

**Web Usability: A Literature Review**[Giselle Joy Esmerial and Rosemary R. Seva]  
Industrial Engineering Department, De La Salle University Science and Technology Complex

This literature talks about an important nonfunctional requirement for any website or a web application that is usability. As defined Usability is scope of any service or a product which is constantly used by a certain set of clients to reach their objective with keeping in mind the efficiency and satisfaction. Alternatively, it can also be said that how easy a user finds to use any product. This nonfunctional requirement can also be a game changer as it is an important management thing that any organization should keep in mind as success of business also

depends on it. More business opportunities can be achieved if adequate usability is present in business website.

## **Chapter-3**

### **System Development**

#### **3.1 Description of the Online Quiz Application :**

This project aims to solve the problem of manual work of teachers that is done during checking and testing of the students and help in saving the time. In this era of technology, our aim is always to build something that is efficient and saves time.

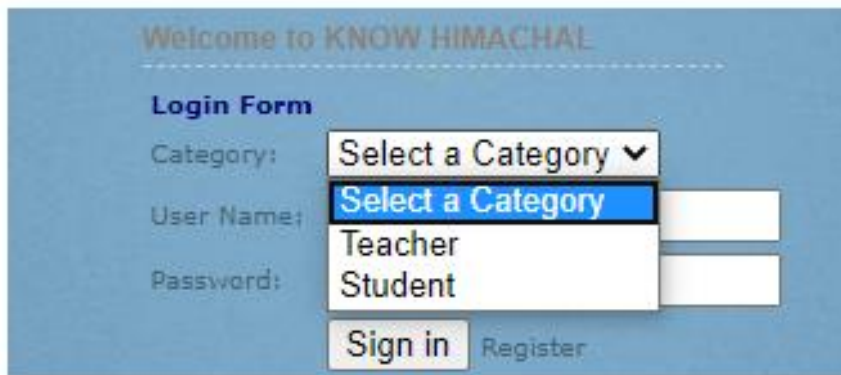
This project tries to solve both these issues and the users whether he or she is a teacher or a student who are using it don't need any special kind of skills to use it. Thus like any other web application or social media application this application is also built so that user can deal with it in an interactive way.

Different functionalities provided by this application are:

- Examiner or teacher can put questions on it.
- Students are required to answer these questions.
- Also, students can see their result
- Calculation of result by calculating correct answers.

As it is very clear that when the home screen is first shown to the user the first thing that he or she is required to do is to select the type of user as this application

supports two types of user i.e. Teacher or Student.



The image shows a login form on a blue background. At the top, it says "Welcome to KNOW HIMACHAL". Below that is the "Login Form" section. It contains a "Category:" label followed by a dropdown menu with "Select a Category" and a downward arrow. The dropdown menu is open, showing "Select a Category" (highlighted in blue), "Teacher", and "Student". To the right of the dropdown are two input fields for "User Name:" and "Password:". At the bottom of the form are two buttons: "Sign in" and "Register".

If the user is logged in as a teacher then he or she is able to upload multiple choice questions on the system whereas if he or she is logged in as student then the user is able to select any test and after completion of the test user is able to see his or her result on the screen.

The login screen is opened in index.jsp. If user proceeds without giving any credentials a message will be displayed asking for credentials. If a new user wants access then he or she needs to register first. By clicking on Register user will be redirected to register.jsp where user have to provide certain details. After going through the registration process user can type his or her username and password and can proceed further.

When the teacher logged in successfully, he will be able to go to various pages by performing various functions. Firstly, teacher will be moved to the page where he or she can read some sort of instructions related to the test. In makequiz.jsp he or she will be able to make test for students and upload them.

Also teacher will be able to view which student has scored most in the test as the

mark list will be accessible to the teacher.

When the user is logged in as student, then student will get the options of which test he or she wants to take. Accordingly, student will be redirected to the quiz under takequiz.jsp. After the completion of the test by the student he or she will be able to see result of the test. Also, student has option to raise certain queries.

## **3.2 Functional and Non-Functional Requirement**

### **3.2.1 Functional Requirement**

Functional requirements for this project

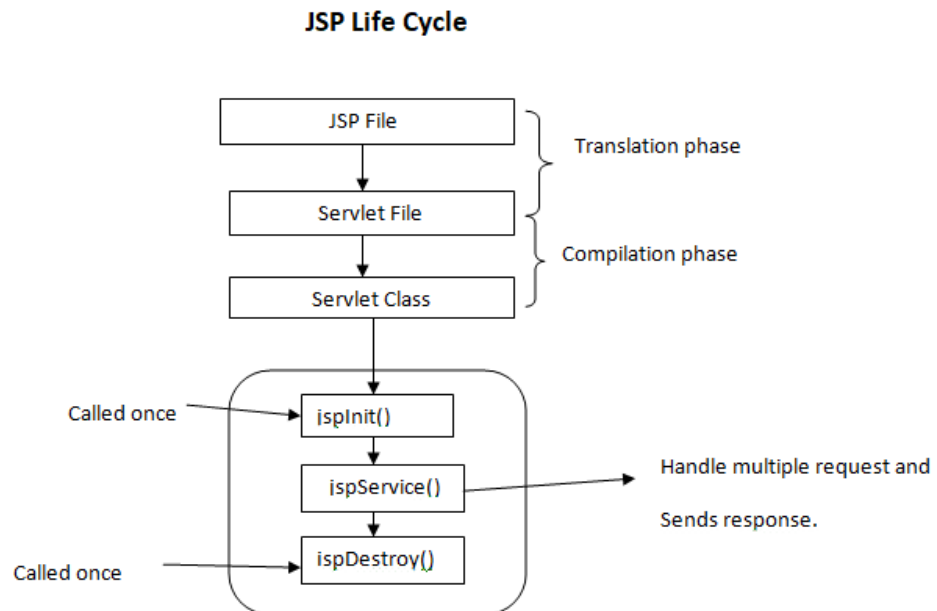
- Oracle or MySQL any one of these database
- Eclipse IDE
- Apache Tomcat
- Web browser used is Google Chrome

### **3.2.2 Nonfunctional Requirement**

Some Nonfunctional requirements are:

- Compatibility in different web browsers.
- Usability which defines that the ease in using the product by the client.
- To use the application user must be registered.
- Security is another issue which must be keeping in mind as user's personal data should not be put on the stake.

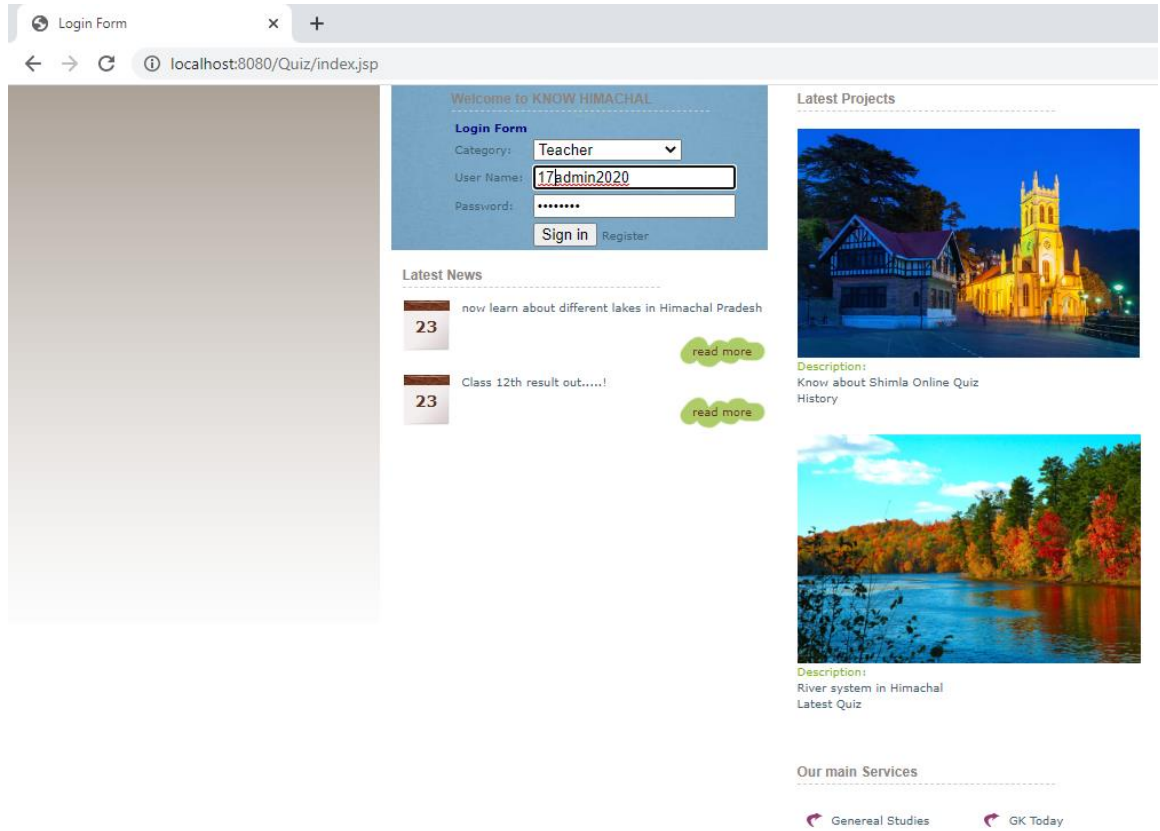
### 3.3 Design Diagram



### 3.4 Implementation Detail and Issue

#### 3.4.1 Implementation Detail

The application starts with the display of the login page. As discussed in earlier chapters that user have to select its category whether he or she is a student or a teacher. Then user will be asked for his or her username and password and after completing the login process he ore she will be directed to the homepage according to user's category. For a new user the user have to go through the registration process by clicking register and by filling the details asked in the registration page under register.jsp file user can him or herself.



Student can see the following page while searching for quizzes related to any subject by searching the name of the subject.





---

**Assess Your!**

Question:

Option1:

Option2:

Option3:

Option4:

Answer:

Description:

For teacher to make any quiz above type of form will be displayed on the screen. Fristly teacher have to put the question followed by the 4 options and then the correct answer of the question followed by a subjective description if any about the answer so that if the students wants further description of the correct answer he or she can refer to it. Also in the decription refernce can be written for example page number of the book or internet resources so that student can refer to it.

If user not able to understand or is facing any kind of problem irrespective of the category of the user he or she can contact the admin by clicking Contact Us and user will be moved to contact.html page which looks as following:



For any Queries feel free to contact Us



**Address:** Plot No. 33  
Near AG office Building  
Shimla, H.P.  
**Telephone:** 919882123415  
**Email:** know\_himachal@gmail.com

Our Clients



tufanipahadi.com



hpgeneralstudies.com

Contact Us

Name:

Email:

Phone:

Message:

### 3.4.2 Implementation Issue

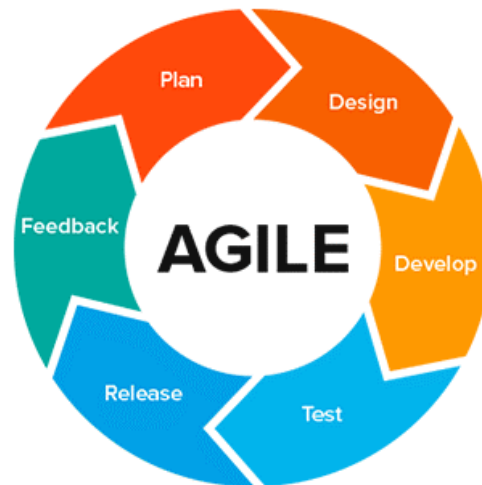
The various issue faced in implementation were related to the application are following:

- User have to log in first to do any kind of interaction with the application if not a user he or she need to register first.
- To attract more users to the application, it should be more interactive and theme should be matching to the type of application. For example, this site quizzes are on state's general knowledge so various images that are used should be related to that.
- Since there is no time limit in completing the quizzes which is also a future scope of the application, students can search on internet to find the answer thus they will not be evaluated in an honest way.
- User may sometime hesitate to provide details like email and contact especially while putting their queries.

## Chapter 4

### Performance Analysis

#### 4.1 Agile Methodology



During making of this project Agile methodology was used. We already know that there are many advantages of agile method in comparison with the waterfall method. Client describe its need and expectations in the beginning and with the constant evaluation and iteration of several phases it works better to meet customer's expectation. Any kind of modification can be easily achieved by following this methodology. In making of this project initially more emphasis was given to the basic structure that is simple login page then redirection to the quiz and then the scores. By constant iteration of different phases,

many functionalities were added to the application like more interactive interface, various articles in the form of blogs, a portal to put queries by user to the administrator etc.



## 4.2 Performance Analysis

While analyzing the performance of any web page speed is a very important criterion. Because if your user find that your web page is taking longer time to load then he or she might not visit your page or will look for an alternative. A recent study by google suggest that 53% of the visit to the web pages are not preferred if the web page takes more than three seconds to get loaded.

Also, various studies have shown that human patience level is decreasing in this world of technology. So, keeping in mind these facts on should keep in mind the speed analysis while analyzing performance of a web page. Analyzing the speed by which the home page of the web application gets loaded we found that most of the images, CSS and JSP files took less than 900ms which is even less than 1second. One important point to be noted here that before loading the home page cache memory was cleared so that it could be more specifically analyzed that without the use of cache how much time is being taken by each file to get loaded.

Registration Form x Settings x +

localhost:8080/Quiz/register.jsp

Network Developer Tools Summary:

Name	Status	Type	Initiator	Size	Time	Waterfall
register.jsp	200	docum...	Other	6.1 kB	22 ms	
style.css	200	stylesh...	register...	5.7 kB	83 ms	
Shimla-in-pictures%20(1).jpg	200	jpeg	register...	41.2 kB	158 ms	
river.jpg	200	jpeg	register...	1.8 MB	821 ms	
bg.jpg	200	jpeg	register...	772 B	78 ms	
top_bg.jpg	200	jpeg	register...	6.6 kB	78 ms	
top_box.gif	200	gif	register...	617 B	74 ms	
menu_bg.gif	200	gif	register...	3.2 kB	71 ms	
login-mountain.jpg	200	jpeg	register...	738 kB	604 ms	
blue-soft.jpg	200	jpeg	register...	33.2 kB	407 ms	
divider.gif	200	gif	register...	391 B	401 ms	
calendar_icon.gif	200	gif	register...	2.0 kB	373 ms	
link_more_bg.gif	200	gif	register...	1.7 kB	475 ms	
footer_bg.gif	200	gif	register...	3.2 kB	151 ms	
menu_arrow.gif	200	gif	Other	567 B	9 ms	

15 requests | 2.6 MB transferred | 2.6 MB resources | Finish: 2.13 s | DOMContentLoaded: 202 ms

## **Chapter 5**

### **Conclusion**

After completion of this project we have concluded that this web application works as per the need and requirement of the client and is user friendly. Also this mini project helped me to understand the design, code and implementation processes which are performed while making any project. Many concepts were revised and many of them were very new which were learnt in making of this web application.

#### **5.1 FUTURE SCOPE**

This project has a vast scope as many other functionalities can be added to it. In first place a timer can be added to each quiz. Due to no limited time for the test students can find answers to the questions anywhere else which ultimately will not be an honest evaluation of their result. Also, to prevent this many other functionalities can be added to the user side especially to the student like restricting any kind of switching of tabs in the browser and introduction of webcam for more honest evaluation of the students. More creative way of showing result and deletion of test by adding an administrative part to the system can be done. In the administrative part addition and deletion of user can be done.

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- <https://www.tutorialspoint.com/servlets-tutorial>
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