

Introduction (Round 0)

1.1 Name of Developer	Ranjan Bose
1.2 Name of your Institute	Indian Institute of Technology Delhi
1.3 Name of Participating Institute	Indian Institute of Technology Delhi
1.4 Application Type	Participating Institute
2.1 Lab Name and ID	HTML 198
2.2 Name of Discipline	Computer Science and Engineering
2.3 Target Group	UG,PG

2.4 University

National Institute of Technology Tiruchirappalli Tamil Nadu
Savitribai Phule Pune University Maharashtra
Rajiv Gandhi Technical University Madhya Pradesh

2.5 Name of Experiments

SNo.	Experiment ID	Experiment Name
1	1495	Introduction to HTML
2	1500	Applying Attributes in HTML Tags
3	1501	Inserting Images through tags
4	1502	Using Anchor Tags for Hyperlinks
5	1503	How <marquee> Tag works in HTML
6	1504	Creating Tables in HTML
7	1505	Types of Lists in HTML
8	1506	Working of <div> Tag in HTML
9	1507	Embedding through <iframe> Tag
10	1508	Creating Web Page Layout in HTML

3.1 Intention of Virtualization

Virtualization will allow the students to feel the environment which she/he will get in the real laboratories. In the case where real laboratories are not available or accessible to the students, it will cater students the online-version of the facilities available in the former. With the help of virtualization, the components which are unavailable due to factors like cost, geographic, demographic, etc. can be made virtually available so that students can get the second-best experience of learning how to use and handle the component/equipment. The main intention of virtualization is to enable students to learn the practical concepts more efficiently with the motive of enhancing their competency level.

3.2 How will the student get the feel of lab?

In the Hypertext Markup Language (HTML) Virtual Lab, the users will get the feel of the real lab through the virtual version of real lab components. The section given at the top of the simulator will act like the Projector Screen which will show the effect of using different HTML tags in preview

mode. After getting the essence of how the tag output will look, users can get the code syntax of any tag by clicking the buttons given for the same. After this learning, the write code section makes the users feel like writing code in different code editors available in real labs. They can write code with the flexibility of making mistakes for which corrections/suggestions will also be provided by the simulator. After rectifying the mistakes, the simulator will show the output.

3.3 Will you be using animations?

Yes.

4.1 Frontend Technology (UI/UX)

• Hypertext Markup Language (HTML) • JavaScript (JS) • JQuery • Cascading Style Sheets (CSS) • Ajax Jason • Animation Two/Three Dimension (2D/3D)

4.2 Backend Technology

Hypertext Processor (php) • MySQL • Structured Query Language (sql) • Web Framework

4.3 Miscellaneous Technology

• Image Editing • Graphics Designing • Cloud Technologies • Network Technologies • World Wide Web (WWW) • Code Editors • Communication Technology

5.1 Learning Objective and Component

- Recall: List editors which can be used to create HTML documents.
- Understand: Describe the Structure of HTML document.
- Apply: Identity different Tags are given in HTML.
- Analyze: Compare the various HTML Tags.

5.2 Student ability to perform in real lab

After performing the experiments in the Virtual Lab, the student ability to perform in the real lab will be increased. As the lab is designed in the way to provide student a complete learning environment where student can read given theory and recall the concepts before performing experiments. Students can also evaluate themselves by attempting Pre and Post Experiment Quizzes so that they can compare the level of understanding the concept increased through Virtual Labs. After understanding the procedure of performing the experiment in virtual lab, the student's ability to perform in real lab will be enhanced as s/he will have the knowledge and experience for the same.

5.3 Outcome through Simulator

The main outcome through simulator is the HTML document Browser View for which code is been written in Write Code Section. The complete process of Previewing, Recalling, Understanding, Writing and Viewing the working of HTML code will help users learning the concepts and enable them to apply the knowledge for solving the real-life problems.

5.4 References

- Web Technologies Black Book: HTML, JavaScript, PHP, Java, JSP, XML and AJAX, Kogent Learning Solutions Inc.
- The Complete Reference, fifth edition By- Thomas A. Powell.
- HTML and CSS: Design and Build Websites By- Jon Duckett.
- Mastering HTML, CSS, JavaScript: Web Publishing by Laura Lemay
- <https://www.w3schools.com/html/>
- <https://www.tutorialspoint.com/html/>
- <https://html.com/>
- <https://stackoverflow.com/questions/tagged/html>

- <https://www.quora.com/topic/HTML>
- <https://nptel.ac.in/courses/106105084/>