

ESD Assignment - 1

AIM :- Develop responsive web design using HTML & containing a term
Styles the page using CSS Use of tag Selection class Selection & id
selection Use inline Internal & external CSS Apply Bootstrap CSS

Objective :-

- (1) To understand HTML Tag
- (2) To learn styling of web pages using CSS
- (3) To learn Bootstrap front end framework

Theory :-

(1) Responsive Web Design (RWD) :-

approach to web design that makes web pages render well on a variety of devices & windows on screen design. This layout adopts automatically to the screen of orientation & platform, ensuring usability & aesthetics across desktop tablets & smartphones.

Primary Goal :- Provide an optimal meaning & interaction experience easy reading & navigation with minimal resizing panning & scrolling across wide range of devices

Role of `<meta name = "viewport">` :- tag tells the browser

how to control the page dimension & scaling

Role :- It sets the visible area of web page to match the device's screen width & initial zoom level

Essential for RWD :- without this tag mobile browser assume a default viewpoint width which cause the page to appear zoomed out & not scale to small screen

Bootstrap & Grid System :-

Bootstrap helps create responsive

website that adapt to devices (mobile, table, desktop)

uses a 12-column grid system where content is placed inside row & column

- The grid adapts using break points with prefixes
- Col - extra small ($< 576 \text{ Px}$)
- Col - sm → small ($> 576 \text{ Px}$)
- Col - md → medium ($> 768 \text{ Px}$)
- Col - lg → large ($> 992 \text{ Px}$)
- Col - xl → extra large ($> 1200 \text{ Px}$)

(ii) Differentiate b/w Tag Class & ID Selectors

Selection	Symbol	Purpose	Example
→ Tag	none	styles all <code><P></code> tags	<code>.P { color : red }</code>
- class	.	styles all element with given class	<code>.highlight { background-color : yellow }</code>
→ ID	#	styles one specific element with an ID	<code>#main { font-size : 20px }</code>

Q5 Three ways to Apply CSS

(1) Inline CSS :- written directly in HTML element styles attributes

`<P style = 'color : blue;> Hello </P>`

(2) Internal CSS : within inside a `<Style>` tag in `<Head>`

```
<style>
    P { color : green }
</style>
```

(3) External CSS : stored in a CSS file & linked in `<head>`

`<link rel = 'Style Sheet' href = 'Style.css'>`

5/9/25

Conclusion :- In this assignment I learned How to build web pages using HTML 5, CSS & Bootstrap I understood the use different CSS selection tag the way to apply CSS & how to viewpoint tag with Bootstrap grid System ensure layout to all screen

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FSD - Ass - 2

Aim :- Develop a web application using JavaScript to implement session, cookies, DOM. Perform validation such as checking for emptiness only member for phone no., special characters sequence for password, regular expression for certain format of the field etc using MySQL database.

Objectives :- (1) To understand what form of validation
(2) To learn basic functioning of DOM objective
(3) To learn how to apply various techniques to implement it

Theory :- Regular expression are pattern used to match character combination in string. They provide character combination in string a powerful & concise way to validate input format by defining a set of rules.

Role :- They keep check if an output string meets a specific pattern.

Stability :- They can enforce exact format rules like no. of digit, presence of certain character for phone no., regex can ensure the no. only contain digit & has specific length.
For Password it can check for upper & lower case.

Difference b/w Session & Cookie

Aspect

Cookies

Session

Storage location

Stored on the client side

Stored on the server side

- Data Size : Limited
- No Strict Size limit

- Can persist beyond Lifetime browser session

- Security less Secure

How they work together

- When a user logs in the server creates a session cookie back with session id
- The client sends this cookie back with each request
- The server uses the session id to retrieve session information from the database

OUT

Enter ~~Q2~~
Client Validation :-
Enter

- Purpose of Performing both Client & Server side validation :-
- Provide immediate feedback to user
- Reduces server load by using catching errors

Subiect

Server Side Validation :-

- Ensure data integrity & security
- Can't be bypassed by malicious user

Ques

- Example Scenario where relying solely on client side could lead to security vulnerability
- Imagine an online shopping website that validates item only on client side. A malicious user can enter price value in the browser's developer tool.

- Submitting the order paying less than actual

No Strict Size limit

Without Server Side validation verify the pride causing financial loss

browser session

more secure

```
<form id = "my form">
```

```
<input type = "text" id = "name" placeholder = "Enter Name">
```

```
</form>
```

```
<div id = "greeting"></div>
```

```
<script>
```

```
document.getElementById('my form').addEventListener('submit', preventDefault());
```

```
const name = document.getElementById('name').value;
```

```
</script>
```

When form is submitted the script prevent default submission & update content

Ques

Steps for connectivity from frontend using HTML to MySQL

Frontend: Create a form & connect user input validation to be JS to check input

Backend: Submit the data to back end language like PHP, HTML, Python

Database Connection:- The backend uses library to connect to MySQL

to MySQL

execute query 1. Insert / fetch data from MySQL tables

Q1

read-only manner. They enable reusability of components allowing customization through input values. Stateful component represents mutable data that belongs to components. It uses user interaction or even props to a component to change its purpose of props in data sharing whereas state is used to dynamic behaviors. Together they form the behavior of components in React application.

Q2

What is a React Components difference b/w class components and functional components with books like useState or useContext?

A:

- 1. React Component use ES6 classes, support life cycle methods part of the user interface either as a class or function.
- 2. Components use of ES6 classes support conditionals, loops, etc initially were stated but now use hooks like useState and use effect to manage state & side effect but components required less code and easier to reuse.
- 3. Performance due to better optimization within hooks they use the same power as class components while more concise.
- 4. Subscriptions modern

Q3

How do you handle user events in React? Provide a simple logic.

Components & how it can be used to update the component state by attaching event handlers.

B:

In React user events are handled by attaching event handlers on click, onchange or onSubmit directly to element. These handlers are functions that define what should happen when the event occurs to update component's state the handler calls the state function class or the use state updater. This causes re-

re-rendering the UI with updated values.

function Counter() {

const [count, setCount] = React.useState(0);

return `<div>`

`<p> Count: {count} </p>`

`<button onClick={setCount(count + 1)}>`

`</div>`

`Increase </button>`

`</div>`

`) ;`

layout is responsive web design. Why is it crucial for modern application?

Describe how you would implement design in React application using CSS media queries or SASS in the browser. Ensure that a website or application adapts to different screen sizes. Are device providers an optimal viewing experience?

It is essential because users access application from devices with varying resolutions. In React responsiveness can be implemented using CSS media queries for conditional styles or media queries in the browser like styles components or another

enable dynamic responsive styling based on props or user agent size.

Q4

Provide a simple logic.

Components & how it can be used to update the component state by attaching event handlers.

In React user events are handled by attaching event handlers on click, onchange or onSubmit directly to element. These handlers are functions that define what should happen when the event occurs to update component's state the handler calls the state function class or the use state updater. This causes re-

re-rendering the UI with updated values.

The importance of higher Priorities in React

Aim :- Finance web page developed in earlier assignment
Rendering lists & postal error handling renders & styles with
react CSS also make it a responsive design to go scale well on
React table & mobile phone

Objective :-

- Finance user interface & experience
- Improve application robustness & navigation

Theory :-

How do list & ice work in React

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array index

Subs

MongoDB a suitable choice for a NoSQL database.

Ques :- Develop a responsive web design using Express.js to inform us CRPD operation to deports with disabilities.

to form
Objective:- Develop a full stack web application
Demos back-end development using development platforms

Theory :- Express.js is a web framework for what is the role of Express.js as a lightweight & flexible web application framework. It is a lightweight & flexible web application framework. It simplifies server side development.

built on top of them, providing robust features for handling HTTP requests by developers. Express developers can easily define middlewares with express middleware. To integrate API's into your application, you can use various tools like `node-fetch` or `axios`.

much of a ~~mass~~ of the ~~re~~
application more ~~structure~~ to maintainable. Its modular
to rich extensible ~~modular~~ a popular choice for building
upon app to RESTful APIs

Explain the concept of CROW operation in context of CRUD. Stand for create, read, update & delete. Which is function for managing data in a web application.

only basic operations

Update : Modifying existing data
Delete : Removing records from the database