

HTML5, CSS, JavaScript & jQuery

Comprehensive Professional Notes (Beginner to Advanced)

This document provides a structured, exam-friendly, and industry-oriented explanation of HTML5, CSS, JavaScript, and jQuery. The content starts from fundamental concepts and gradually moves toward advanced topics, with special emphasis on HTML5.

1. Introduction to Web Technologies

Web development involves creating websites and web applications that run on a browser. The core technologies of the web are HTML, CSS, and JavaScript.

- **HTML** – Structure of the webpage

- **CSS** – Styling and layout

- **JavaScript** – Behavior and interactivity

jQuery is a JavaScript library that simplifies DOM manipulation, events, and animations.

2. HTML5 – Basics and Core Concepts

HTML5 is the latest version of HyperText Markup Language used to structure modern web pages.

2.1 Features of HTML5

- Semantic elements
- Multimedia support (audio, video)
- Form enhancements
- Offline storage and APIs

2.2 Basic HTML5 Structure

```
<!DOCTYPE html>
<html>
<head>
  <title>My First Page</title>
</head>
<body>
  <h1>Hello HTML5</h1>
  <p>Welcome to web development</p>
</body>
</html>
```

3. HTML5 Semantic Elements (Special Focus)

Semantic elements clearly describe their meaning to both browser and developer.

- **<header>** – Top section of a page
- **<nav>** – Navigation links
- **<section>** – Group of related content
- **<article>** – Independent content
- **<footer>** – Bottom section

Text-based Layout Representation:

```
<header>
  <nav>Menu</nav>
</header>
<section>
  <article>Main Content</article>
</section>
<footer>Footer</footer>
```

4. HTML5 Forms and Multimedia

4.1 New Form Input Types

- email, date, number, range
- required, placeholder, autofocus

4.2 Audio and Video

```
<video controls>
  <source src="movie.mp4" type="video/mp4">
</video>
```

5. CSS – Styling the Web

CSS (Cascading Style Sheets) is used to control layout, colors, fonts, and responsiveness.

5.1 CSS Syntax

```
p {  
    color: blue;  
    font-size: 16px;  
}
```

6. Advanced CSS Concepts

- Flexbox and Grid
- Media Queries
- Transitions and Animations

7. JavaScript Fundamentals

JavaScript is a scripting language used to make web pages interactive.

```
let name = "User";
alert("Hello " + name);
```

8. Advanced JavaScript

- DOM Manipulation
- Events and Event Handling
- ES6 Features

9. jQuery Library

jQuery simplifies JavaScript programming by reducing code complexity.

```
$(document).ready(function(){
  $("button").click(function(){
    $("p").hide();
  });
});
```

10. Summary and Revision Notes

HTML5 provides structure, CSS provides design, JavaScript adds interactivity, and jQuery simplifies scripting. Mastering these technologies forms a strong foundation for modern web development.

Important Keywords:

HTML5, Semantic Elements, CSS Flexbox, DOM, Events, jQuery Selectors