HTML 5

HTML stands for Hyper Text Markup Language. It is used to design web pages using a markup language. HTML is an abbreviation of Hypertext and Markup language. Hypertext defines the link between the web pages. A markup language is used to define the text document within the tag, which defines the structure of web pages.

HTML 5 is the fifth and current version of HTML. It has improved the markup available for documents and has introduced application programming interfaces (API) and a Document Object Model (DOM).

The below examples illustrate the HTML 5 content.

Example:

```
<!DOCTYPE html>
<html>
<head>
    <title>HTML 5 Demo</title>
    <style>
    .GFG {
        font-size:40px;
        font-weight:bold;
        color:green;
        }
        body {
            text-align:center;
        }
    </style>
</head>

<body>
    <div class = "GFG">GeeksforGeeks</div>
    <aside>
```

```
            <div>A computer science portal for geeks</div>
        </aside>
</body>
</html>
```

Features:

- It has introduced new multimedia features that support audio and video controls by using <audio> and <video> tags.
- There are new graphics elements including vector graphics and tags.
- Enrich semantic content by including <header> <footer>, <article>, <section> and <figure> are added.
- Drag and Drop- The user can grab an object and drag it further dropping it in a new location.
- Geo-location services- It helps to locate the geographical location of a client.
- Web storage facility which provides web application methods to store data on a web browser.
- Uses the SQL database to store data offline.
- Allows drawing various shapes like triangle, rectangle, circle, etc.
- Capable of handling incorrect syntax.
- Easy DOCTYPE declaration i.e. <!doctype html>
- Easy character encoding i.e. <meta charset="UTF-8″>

HTML 5 CONTROL ELEMENTS

- Audio Element
- Canvas Element
- contenteditable Attribute
- Input Types
- Keygen Element
- Meter Element
- Output Element
- Progress Element
- SVG Element

- Video Element

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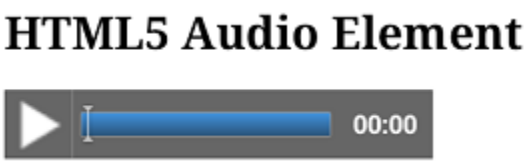
1. Audio Element

The <audio> element makes it possible to embed audio files directly in a web page without using plug-ins. By nesting <source> elements within an <audio> element, you can reference multiple file types.

```
<h1>HTML5 Audio Element</h1>
<audio controls>
  <source src="Media/audio_sample.ogg" type="audio/ogg">
  <source src="Media/audio_sample.mp3" type="audio/mpeg">
  Sorry. Your browser doesn't support the HTML5 audio element.
</audio>
```

The sample code above produces the player control shown below:



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2. Canvas Element

You can use the <canvas> element to draw two-dimensional graphics on a web page. Use the <canvas> element to create a container for a graphic, and then render the graphic itself on the fly using JavaScript.

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3. contenteditable Attribute

Setting the contendeditable attribute to "true" makes a text element on your web page available for the user to edit. You can also use the localStorage object to save the user's changes, effectively turning your web page into a text editor.

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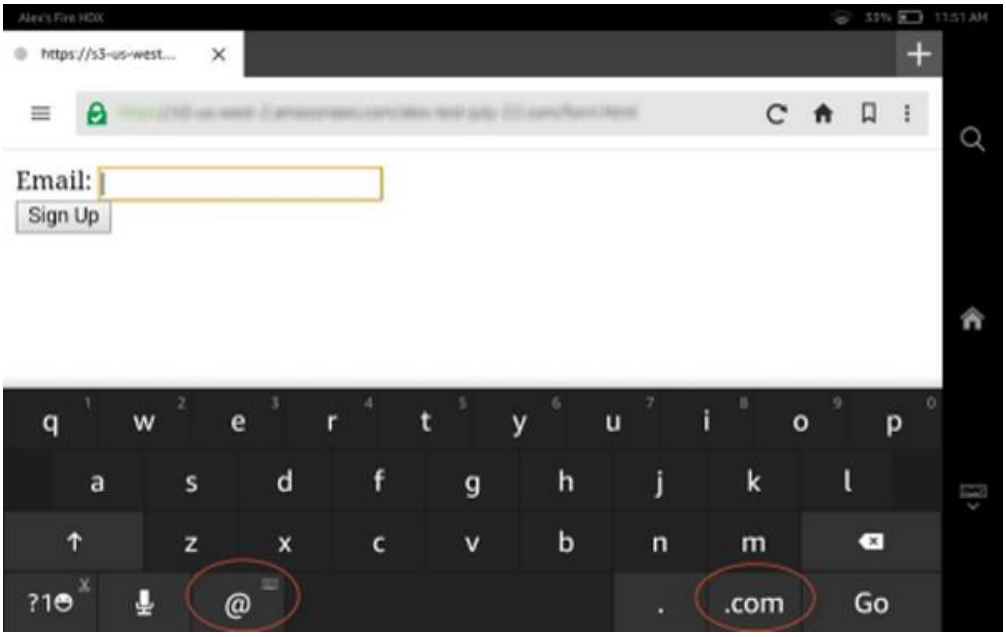
4. Input Types

In HTML5, you can use input types to make forms more responsive to mobile clients. By specifying in your markup the type of input required, you can trigger the mobile device to display an appropriate virtual keyboard. Amazon Silk supports this functionality. For example, if you set the type attribute to "email", Amazon Silk displays a virtual keyboard featuring the **@** and **.com** keys, which make the keyboard more user-friendly for typing an email address.

Example :

```
<form>
  Email: <input type="email" name="email"><br>
  <input type="submit" value="Sign Up">
</form>
```

The Silk virtual keyboard is shown below:



---

5. Keygen Element

The <keygen> element specifies a form field for securely authenticating users. When the form containing the <keygen> element is submitted, a public/private key pair is generated. The key pair can be used as part of a certificate authentication system.

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6. Meter Element

You can use the <meter> element to measure data within a given range. It specifies a fractional value or gauge. For example, you could use the <meter> element to gauge hard disk usage.

Hard Disk Usage: <meter min="0" value="239" max="296">239 GB used out of 296 GB total</meter>

The sample code above produces the gauge below:

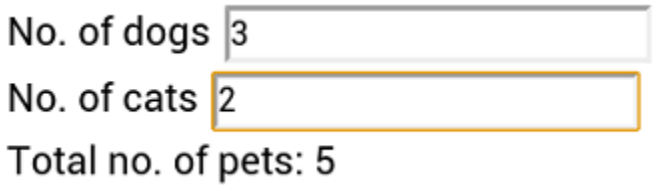
Hard Disk Usage:

7. Output Element

The <output> element represents the result of a calculation. Although the <output> element is associated with a form, it doesn't have to be a child of the form. You can collect input for a calculation in a form, and then use the <output> element to display the results of the calculation elsewhere in the document. In the following example, the <output> element displays the sum of the values entered into the two input fields:

```
<form oninput="pets.value=parseInt(dogs.value)+parseInt(cats.value)">
  No. of dogs
  <input type="number" id="dogs" value="0"><br>
  No. of cats
  <input type="number" id="cats" value="0"><br>
  Total no. of pets:
  <output name="pets" for="dogs cats"></output>
</form>
```

Here's how the markup looks in Silk, after a user enters values in the input fields:



Note that the on input event is not supported by Silk Gen 1

8. Progress Element

The <progress> element represents progress toward completion of some task, like a file download. You can use the <progress> tag together with JavaScript to create a progress display.

Example :

```
<div>File downloading: <progress value="70" max="100">70%</progress></p></div>

<div>Silk supports the HTML5 progress element.</div>
```

The sample code above produces the progress display shown below:

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9. SVG Element

Scalable Vector Graphics (SVG) is an XML-based format for describing two-dimensional web graphics. Amazon Silk supports SVG both inline via the <svg> tag and externally using the <img>, <object>, and <embed> tags. The example below creates an SVG rendering of a rectangle with a horizontal linear gradient. The image shows the result rendered by Silk.

```
<html>
 <body>
  <svg width="180" height="120">
   <defs>
   <linearGradient id="gradient" x1="0%" y1="0%" x2="100%" y2="0%">
   <stop offset="0%" style="stop-color:rgb(255,255,255);stop-opacity:1.0" />
   <stop offset="100%" style="stop-color:rgb(0,0,255);stop-opacity:0.75" />
   </linearGradient>
```

```
    </defs>
    <rect x="10" y="10" width="160" height="100" style="fill:url(#gradient)">
  </svg>
 </body>
</html>
```

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10. Video Element

The <video> element makes it possible to embed video files directly in a web page without using plug-ins. By nesting <source> tags within a <video> element, you can reference multiple file types.

```
<h1>HTML5 Video Element</h1>

<video width="320" height="240" controls>
  <source src="Media/video_sample.mp4" type="video/mp4">
  <source src="Media/video_sample.ogv" type="video/ogg">
  <source src="Media/video_sample.webm" type="video/webm">
  Sorry. Your browser doesn't support the HTML5 video element.
</video>
```

The sample code above produces the player control shown below:

HTML5 Video Element