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#RahoAmbitious

Full Stack Software Development

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Course: Introduction to Web Development

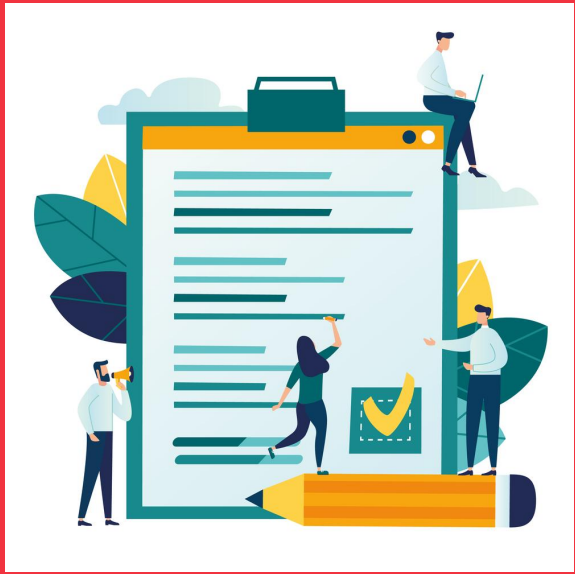
Lecture On: HTML Forms and HTML5

In the previous class, we covered…

- How to create tables in HTML?
- How to create lists in HTML?
- How to create dropdowns in HTML?
- How to show YouTube videos on your website?
- Begin developing the Recipes website.

Today's Agenda

- How to create forms in HTML?
- HTML5



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HTML Forms

LOGO

UNIVERSITY NAME

Phone: 123 456 7890, **Website:** websiteurl.com
Address here, city here, Country here, Code No. 12345

PHOTO

ADMISSION FORM

Please fill up the form in English Capital Letters. Admission taken once can not be cancelled

PERSONAL INFORMATION			
Full Name		Nickname	
Gender	☐ Male ☐ Female	Date of Birth	
Religion		Place of Birth	
Blood Group		Nationality	
Contract No		E-mail	
Father's Name		Profession	
Mother's Name		Profession	
Present Address		Permanent Addr.	
City Name		City Name	
State Name		State Name	
Country Name		Country Name	

	Exam	Name of School/ College	Year	Board/ University	GPA
Board Success Information	SSC (10th)				
	HSC (12th)				
	Under Graduate				

Student's Signature

STUDENT COPY (Filled by Office)			
Name		Father's Name	
Program		Session	
Program Roll		Campus	

Authorized Signature

HTML Forms

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Introduction to Forms

type="text"

type="email"

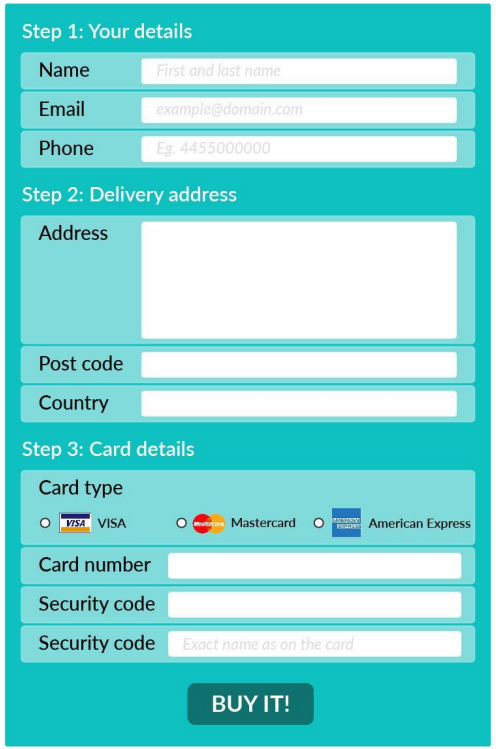
type="tel"

textarea

type="number"

type="radio"

type="submit"



HTML Forms

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HTML Form Coding Example

```
<html>
    <head>
        <title>Log In</title>
    </head>
    <body>
        <form action="/action-page.php" method="get" target="_blank">
            <label for="name">Username:</label>
            <input type="text" name="name" id="name" />

            <label for="password">Password:</label>
            <input type="password" name="password" id="password" />

            <input type="checkbox" name="remember" id="remember" />
            <label for="remember">Keep me logged in.</label>

            <input type="submit" value="Login"/>
        </form>
    </body>
</html>
```

HTML Forms

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The <form> Element

Form Attributes

- action – It defines the action to be performed when the form is submitted.
- method – It defines the HTTP method for submitting data.
- target – It defines where the submitted results should open.

```
<html>
    <head>
        <title>Log In</title>
    </head>
    <body>
        <form action="index.html" method="get" target="_blank">
            <label for="name">Username:</label>
            <input type="text" name="name" id="name" />

            <label for="password">Password:</label>
            <input type="password" name="password" id="password" />

            <input type="checkbox" id="remember" />
            <label for="remember">Keep me logged in.</label>

            <input type="submit" value="Login"/>
        </form>
    </body>
</html>
```

HTML Forms

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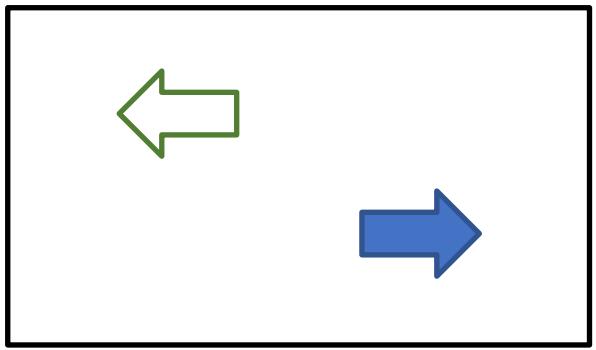
Method: GET vs POST



GET	POST
It is used for **requesting data from a resource.**	It is used for **sending data to the server to update/create a resource.**
Form data **IS VISIBLE in the URL.**	Form data is **NOT VISIBLE in the URL.**
Clicking the back button **will not re-submit the data**; hence, it is harmless.	Clicking the back button will **re-submit the data**; hence, you need to be cautious while using POST.
It can be bookmarked and cached.	It cannot be bookmarked and cached.
The length of the URL is **restricted**.	There are no restrictions on the length of the URL.
It is Not Secure.	**It is Secure**.

Poll 1 (15 Sec)

Which of the following is an attribute of the form tag in HTML?

1. method
2. action
3. target
4. input

Poll 1 (Answer)

Which of the following is an attribute of the form tag in HTML?

1. **method**
2. **action**
3. **target**
4. input

Poll 2 (15 Sec)

The ‘method’ attribute in an HTML form:

1. Defines the action to be performed after form submission.
2. Specifies whether the result after form submission will open in a new browser tab.
3. Specifies the HTTP method to be used during form submission
4. None of the above

Poll 2 (Answer)

The ‘method’ attribute in an HTML form:

1. Defines the action to be performed after form submission
2. Specifies whether the result after form submission will open in a new browser tab
3. **Specifies the HTTP method to be used during form submission**
4. None of the above

HTML Forms

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The <input> Element

`<input type="text" />`	Allows users to type text.
`<input type="email" />`	Allows users to type text in email format, i.e. if the typed text does not contain @ or . as normal email formats do, it will throw up an error message on submitting.
`<input type="password" />`	Allows users to type text in password format. The text entered would look like this: ••••••
`<input type="number" />`	Allows users to type characters in number format. Users will not be able to type alphabets or any other special character if the input is defined as type number.
`<input type="radio" />`	Allows users to include a radio button selection, i.e., choose only one of multiple options provided.
`<input type="checkbox" />`	Allows users to include a checkbox selection, i.e., choose multiple options provided.
`<input type="file" />`	Allows users to upload files from their local machines.
`<input type="range" />`	Allows users to add a range slider between a minimum value and a maximum value.
`<input type="submit" />`	Allows users to submit a form.

Poll 3 (15 Sec)

Select whether the following statement is true or false:

<input> is an empty or self closing tag.

1. True
2. False

Poll 3 (Answer)

Select whether the following statement is true or false:

<input> is an empty or self closing tag.

1. **True**
2. False

Poll 4 (15 Sec)

How can you include a text input field in an HTML form?

1. <input type=“textfield” />
2. <textfield />
3. <input type=“text” />
4. <textinput />

Poll 4 (Answer)

How can you include a text input field in an HTML form?

1. <input type="textfield" />
2. <textfield />
3. **<input type="text" />**
4. <textinput />

HTML Forms

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Attributes of the <input> Element

`value`	It can be used to specify an initial value for an input field.
`size`	It can used to specify the visible width of the input field box.
`min`	It specifies the minimum value of the input field.
`max`	It specifies the maximum value of the input field.
`maxlength`	It specifies the maximum allowable number of characters.
`readonly`	It is used to ensure that the input field becomes read-only.
`disabled`	It is used to disable the field
`placeholder`	Text written inside the input field when it is empty
`required`	It is used to mark the input fields as compulsorily before submitting the form.

Attributes of the <input> Element

Not all the attributes discussed in the last slide are present for all types of input elements.

For Example:

- Input field cannot have checked attribute.
- Checkbox cannot have min or max attribute.
- alt is an attribute specific to images.
- autocomplete attribute can be used on all the input types.

You can read more about it here.

Poll 5 (15 Sec)

What does the 'value' attribute specify in an HTML form?

1. It specifies the initial value of an input field.
2. It specifies that the value can only be read.
3. It specifies that the value cannot be changed.
4. None of the above

Poll 5 (Answer)

What does the 'value' attribute specify in an HTML form?

1. **It specifies the initial value of an input field.**
2. It specifies that the value can only be read.
3. It specifies that the value cannot be changed.
4. None of the above

Poll 6 (15 Sec)

What is the use of the ‘placeholder’ attribute?

1. It specifies the minimum value of the input field.
2. It specifies the maximum value of the input field.
3. It describes the expected value of the input field.
4. It describes the actual initial value of the input field.

Poll 6 (Answer)

What is the use of the ‘placeholder’ attribute?

1. It specifies the minimum value of the input field.
2. It specifies the maximum value of the input field.
3. **It describes the expected value of the input field.**
4. It describes the actual initial value of the input field.

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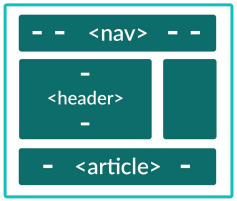
Project Work

(We shall create the Login form for our project using all the required elements.)

You can refer to the solution here.

What Is New in HTML5?



Semantic Elements

These are HTML elements that describe the meaning of the element to the browser and the user.

Canvas

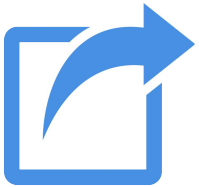
This is a 2D drawing surface using JavaScript.

Persistent Local Storage

This is localised storage used to remove dependency on third-party plugins.

Geolocation

Using this, visitors can choose to share their location with the website requesting it.



Drag and Drop

This is used to drag and drop elements from one position to another.

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HTML5 Structure

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
    </body>
</html>
```

HTML5 Structure: Example

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
        <header role="banner">
             <h1>Introduction to HTML5</h1>
        </header>

        <article>
              <section>
                  <p>One article can have multiple sections.</p>
              </section>
        </article>

        <footer>Created by upGrad.</footer>
    </body>
</html>
```

HTML5 Structure Explained

```
<!DOCTYPE html>
```

Information to the browser to declare it as an HTML5 document.

```
<meta charset="utf-8">
```

A **charset** stands for character encoding, which helps the computer interpret the input into real characters. **UTF-8** uses 8-bit blocks to represent a character. UTF-8 covers all the characters, punctuations and symbols.

```
<header></header>
```

<header> is a semantic element used to represent the header of the document

```
<footer></footer>
```

<footer> is a semantic element used to represent the footer of the document

```
<article></article>
```

<article> is a semantic element used to represent a self-contained content of a document.

```
<section></section>
```

<section> is a semantic element used to represent a section with headers in a document.

HTML5 tags similar to HTML tags are case-insensitive. Therefore, the tags <article> and <ARTICLE> are the same.

Poll 7 (15 Sec)

Which of the following is the correct syntax of a DOCTYPE in HTML5?
(Note: More than one option may be correct.)

1. <DOCTYPE html>
2. <doctype html>
3. <!DOCTYPE html>
4. <!doctype HTML>

Poll 7 (Answer)

Which of the following is the correct syntax of a DOCTYPE in HTML5?
(Note: More than one option may be correct.)

1. <DOCTYPE html>
2. <doctype html>
3. **<!DOCTYPE html>**
4. **<!doctype HTML>**

Poll 8 (15 Sec)

Will HTML5 work if you do not use <!DOCTYPE html>?

1. Yes
2. No
3. It will trigger the quirks mode or almost standards mode.
4. Unsure whether HTML5 would work or not

Poll 8 (Answer)

Will HTML5 work if you do not put <!DOCTYPE html>?

1. Yes
2. No
3. **It will go to the quirks mode or almost standards mode.**
4. Unsure whether HTML5 would work or not

<header>

- This tag represents the header section of a web page.
- It is normally added at the top of the <body> tag.
- It may contain some heading elements but also a logo, a search form, an author name, and other elements, which form introductory or navigational aids.

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
        <header>
            <h1>Introduction to HTML5</h1>
            <p>Posted on Monday, 1 July 20202 by Prachi
            </p>
        </header>
    </body>
</html>
```

Semantic Elements

<footer>

- This tag represents the footer or the end of a web page.
- It is normally added at the end of the <body> tag.
- It generally has the links and addresses of social media accounts required for contacting the owners of these social media accounts, author details, copyright details.

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
        <footer>
            <p>&copy; Developed by upGrad.</p>
            <a href="https://www.upgrad.com/">
                Connect with us on Facebook
            </a>
        </footer>
    </body>
</html>
```

<nav>

- This tag represents the navigation bar that is generally found at the top of a website.
- Common examples of navigation sections are menus, tables of contents, and indexes.

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
        <nav>
           <ul>
               <li><a href="./index.html">Home</a></li>
               <li><a href="./about.html">About Us</a></li>
               <li><a href="./contact.html">Contact</a></li>
           </ul>
        </nav>
    </body>
</html>
```

<canvas>

- The **<canvas>** tag is an empty space for drawing an element using **JavaScript**.

```
<!DOCTYPE html>
<html>
    <body onload="draw();">
        <canvas id="canvas" width="130" height="100">
        </canvas>
        <script>
          function draw() {
            var canvas = document.getElementById('canvas');
            if (canvas.getContext) {
              var ctx = canvas.getContext('2d');
              var rectangle = new Path2D();
              rectangle.rect(10, 10, 50, 50);
              var circle = new Path2D();
              circle.moveTo(125, 35);
              circle.arc(100, 35, 25, 0, 2 * Math.PI);
              ctx.stroke(rectangle);
              ctx.fill(circle);
            }
          }
      </script>
  </body>
</html>
```

<svg>

- The **<svg>** tag is a container for Scalar Vector Graphics (SVG).
- Inside **<svg>**, you can create elements/shapes using *<circle>, <rect>, <polygon>,* etc.

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
        <svg width="100" height="100">
            <circle cx="5" cy="5" r="4" fill="red" />
        </svg>
    </body>
</html>
```

<section>

- In simple words, the <section> tag defines a section of a web page.
- Typically, a section always has a header that defines the heading of the content and the content itself.
- Headings are generally defined <h1>–<h6> tags, and the content of the section tag can be anything from text to images, videos or graphics.

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
        <section>
            <h1>World War 2</h1>
            <p>The World War 2 began in 1939 when
Germany declared war on Poland, followed by England
and France declaring on Germany.</p>
        </section>
    </body>
</html>
```

<aside>

- As the name suggests, this tag basically refers to the section of a website that is not directly related to the main content.
- Think of <aside> as a sidebar or the ‘Related Articles’ section of a website.

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
        <p>World War 2 started in 1939 after
England and France declared war on Germany.</p>
        <aside>
            <h4>Related Articles</h1>
            <p>Adolf Hitler</p>
            <p>Atomic Bombing of Japan</p>
        </aside>
    </body>
</html>
```

Semantic Elements

<audio>

- It is used to embed audio in our HTML document.
- A single HTML document may consist one or more audios.
- It has multiple attributes such as:
    - controls
    - autoplay
    - muted
    - loop
    - duration

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Introduction to HTML5</title>
  </head>
  <body>
    <audio controls autoplay>
      <source src="myAudio.mp3" type="audio/mpeg">
      <source src="myAudio.ogg" type="audio/ogg">
      <p>
        Your browser doesn't support HTML5 audio.
      </p>
    </audio>
  </body>
</html>
```

<video>

- The <video> tag is used to embed a media player into the document.
- You can use <video> tag for the audio content as well, but using <audio> element is suggested because it provides a more appropriate user experience.
- It has multiple attributes such as:
  - controls
  - width
  - autoplay
  - muted
  - loop
  - duration

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <title>Introduction to HTML5</title>
    </head>
    <body>
       <video controls>
          <source src="myVideo.mp4" type="video/mp4">
          <source src="myVideo.webm" type="video/webm">
          <p>
             Your browser doesn't support HTML5 video.
          </p>
        </video>
    </body>
</html>
```

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Project Work

(We will add HTML5 elements to our project wherever required.)

You can refer to the solution here.

Poll 9 (15 Sec)

What does SVG stand for?

1. Scaled Vector Graphics
2. Scalable Vector Graphics
3. Searched Vector Graphics
4. All of the above

Poll 9 (Answer)

What does SVG stand for?

1. Scaled Vector Graphics
2. **Scalable Vector Graphics**
3. Searched Vector Graphics
4. All of the above

Hands-On Exercise (5 mins)

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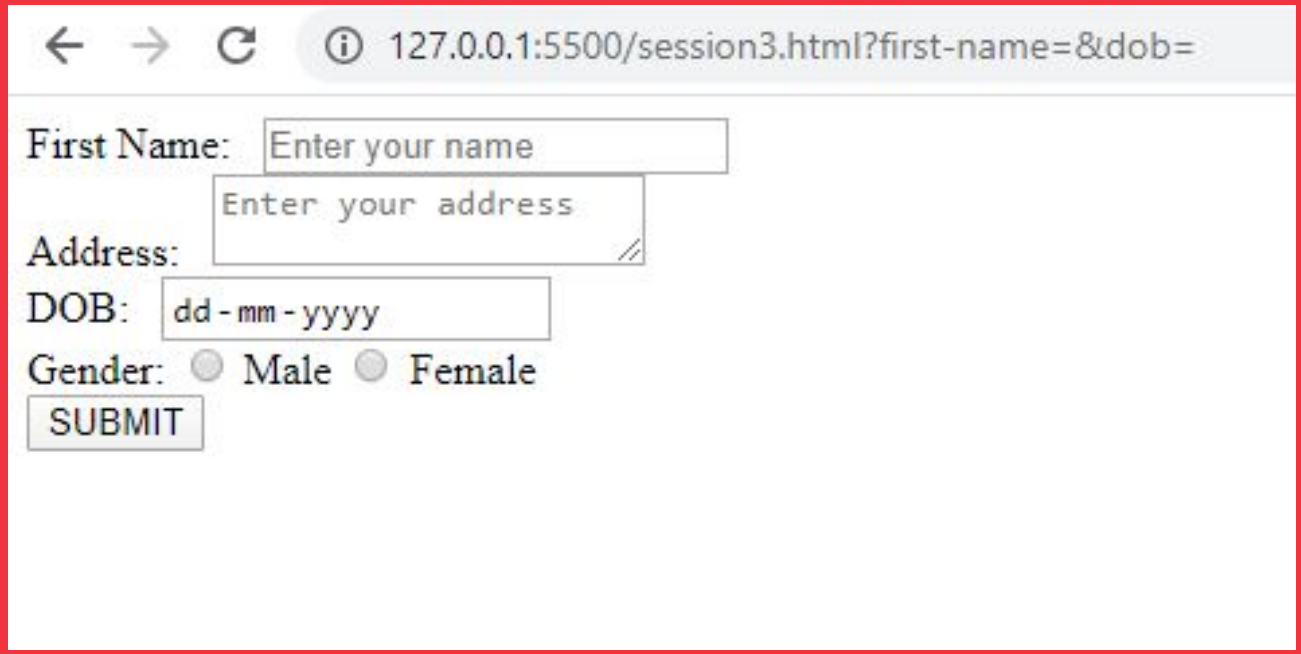
Write an HTML code for the output shown below:

The stub code is here.

The solution is here.



Key Takeaways

- You can create forms using input, textarea and buttons.
- Based on the use, input types are of many kinds, ranging from text to number to submit button.
- The **action** attribute in the form element specifies what should happen after a form is submitted.
- Form methods can be either **GET** or **POST**.
- The GET method is used for requesting data, although it is not a secure method, since data can be seen in the URL. POST is used for updating/creating a resource, and it is quite a secure method.
- The input elements have different attributes and not all attributes can be used on all input types.
- HTML5 has a host of new features including semantic elements, drag and drop, geolocation, local storage, and new attributes in form.

Tasks to Complete after Today's Session

MCQs
Coding Questions
Project - Checkpoint 3

In the next class...

- Introduction to CSS
- How to add CSS and styling to your website?
- CSS heights, widths and units
- CSS Colors, Text and Fonts
- CSS Backgrounds

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Thank You!