



Community Experience Distilled

Mastering HTML5 Forms

Create dynamic and responsive web forms with this in-depth, hands-on guide

Gaurav Gupta

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BIRMINGHAM - MUMBAI

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Preface

Web viewers may never know about the background of an application, such as HTML5, CSS3, Responsive Web Design, or PHP. What they want to know is whether your application works on their device or not and how much effort is required.

Even though web development has changed over the years, the core task of creating a web page has not been changed. We create a document and put it out on the Web for people to view. To put something on the Web, we need to learn some special languages that are accepted on the Web. Yes, we are talking about the scripting languages such as HTML and PHP.

The main objective of this book is to ensure that the user who fills the form built by you should enjoy and feel satisfied in every possible way. Here, satisfaction means the look and feel of the forms and minimum adjustments on the page while navigating, which can be on a desktop computer, mobile device, or mini laptop.

This book has been written keeping in mind that readers should enjoy a step-by-step, example driven, and visual-based approach to learning. This book will cover many aspects of web development, such as the language used to develop the web forms as well as ways to make web forms look good and accept information from visitors.

This book will act as a platform with which you will learn how to create beautiful and responsive forms and link them to the database where the form information will be stored.

What this book covers

Chapter 1, Forms and Their Significance, explains what web forms are and how we can create these using the new HTML5 form elements. It also explains the benefits of web forms along with the guidelines that must always be kept in mind while designing and developing a form.

Chapter 2, Validations of Forms, explains validations and their necessity in forms as well as the new HTML5 elements and their attributes that reduce the effort of client-side validations. It gives a brief description of the validation constraints and supported API's and also briefs us on the customization of error messages on the browser.

Chapter 3, Styling the Forms, explains the CSS3 properties that can be utilized to make forms more presentable. It details us about the vendor-specific prefixes that are utilized in different browsers along with the effective styling guidelines that must be kept in mind while enhancing the look and feel of a form.

Chapter 4, Connection with Database, explains briefly about linking a form to the server using PHP and MySQL, which are used by web developers to store user information.

Chapter 5, Responsive Web Forms, explains responsive designing and approaches that can be used to make our form responsive. It also discusses the guidelines you should follow to make a responsive form.

What you need for this book

Any text editor such as Notepad++ or Bluefish can be used to write HTML and JavaScript code. In Windows, Notepad can also be used to create a simple HTML file and CSS and JavaScript code can be embedded inside it, which can then be opened in a web browser.

The good news is that almost every web browser comes with a built-in HTML and JavaScript Interpreter that compiles the code and executes it within the web browser host environment during run-time.

PHP files can be written in any of the editors used for writing HTML, CSS, or JavaScript. For linking the form to the server, the Wamp server is used in Windows and phpMyAdmin tool is used for MySQL databases.

Who this book is for

This book will help anyone who is willing to enhance their skills in building web forms using HTML5 and related technologies.

This book should be read by those who are interested in learning how HTML5, CSS3, and PHP can be used to build responsive, beautiful, and dynamic web forms.

Different readers will find different parts of the book interesting.

Without worrying much about having in-depth knowledge of previous W3C specifications and PHP, users who have learned HTML and PHP on a beginner level can directly learn how to build web forms using HTML5, CSS3, and PHP and collect customer information.

Conventions

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text, database table names, folder names, filenames, file extensions, pathnames, dummy URLs, user input, and Twitter handles are shown as follows: "We can include other contexts through the use of the `include` directive."

A block of code is set as follows:


```
<div class="gender">
  <label for="gender">Gender</label><br>
  <input type="radio" name="gender"><label>Male</label>
  <input type="radio" name="gender"><label>Female</label>
</div><br>
```


When we wish to draw your attention to a particular part of a code block, the relevant lines or items are set in bold:

```
font-family: Helvetica, Arial, sans-serif;
color: #000000;
background: rgba(212,228,239,1);
background: -moz-linear-gradient(top, rgba(212,228,239,1) 0%,
  rgba(134,174,204,1) 100%);
background: -webkit-gradient(left top, left bottom, color-
  stop(0%, rgba(212,228,239,1)), color-stop(100%,
  rgba(134,174,204,1)));
```

New terms and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: " For submitting the form to the server, we have created a **Submit** button".

In this book, we have used  for Mozilla Firefox, Google Chrome, Safari, Internet Explorer, and Opera.

 Warnings or important notes appear in a box like this..

 Tips and tricks appear like this.

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1

Forms and Their Significance

Using forms in a web page is the most effective way to gather relevant data from the user. Forms are how users really interact with the application whether it's a search form, a login screen, or a multipage registration wizard. Forms can have inputs such as name, gender, credit card number, password, images, or upload files into the forms.

In this chapter we will cover the following topics:

- Web forms and their benefits
- The new HTML5 `<form>` elements
- Building a web form
- Guidelines to build a web form

Understanding web forms

Before we start learning about HTML5 forms, let us understand what a web form is.

Forms on a web page provide an interface where information can be shared between a client and a user more easily and securely in comparison to paper-based forms. They are a collection of various `<input>` types, such as `textbox`, `radiobutton`, and `checkbox`, which allow users to perform various actions and simplifies decision making.

Forms have always been a fundamental part of the Web. Without them, various web transactions, discussions, and efficient searches would simply not be possible. Web-based forms are supported in most browsers and can be used to give feedback after purchasing a product, retrieve search results from a search engine, contact for any service, and much more.

With a simple example, let us understand what a web form is. Say you once went to a hospital and the receptionist gave you a printed form to fill out. You would have come across many fields that collect information about a patient. Some of them asked you to write the patient's name and address in what looked like a textbox or a text area, and other details such as type of room and so on; you were also asked to choose one or multiple radio buttons or checkboxes from the options. The same concept follows for HTML5 forms. You have to fill out the fields of that form and press a button to send this information to the server, rather than going to the hospital and handing the form over to the receptionist.

Benefits

Forms in web pages offer plenty of advantages over paper-based forms. Apart from being used to gather data online, web forms offer convenience and speed for both the user and the form owner.

Some advantages of web forms are:

- Online forms help the customers to talk to the companies as they contain digitally stored data and deduce that data to meaningful information
- The form owners can quickly build and distribute the HTML5 interface, targeting a large audience
- The form owner can easily update and modify forms as needed
- The Cascading Style Sheets (CSS) and JavaScript attributes allow authors to customize form controls with specific styles and functions
- Web forms are time saving and cost effective as they require no manpower to gather information
- They provide a visibility for decision making, for example, shopping online on websites such as eBay
- As the data is entered directly by the customer, it can be easily sorted to get the required information

Even if forms have many benefits, building them is not the nicest job and can become a headache as some forms can get very complicated if we talk about validation, error handling, and styling. We either validate or catch the errors using a server-side language or we use JavaScript, or even both. Whichever the case, the web forms can take up a lot of your development time and this can be a problem. With HTML5, however, some of this pain has been taken away by the introduction of the new `<form>` types, which we can use.

In spite of many enhancements in HTML5, some things are kept the same such as:

- Forms still send the values to the server when the user clicks on the **Submit** button
- Forms are still enclosed in the `<form>` element, as shown in the following code snippet:

```
<form action= "#">
  <input type= "text" name= "emailaddress">
  <input type= "submit" name= "submit">
</form>
```

- Form controls are still fully scriptable

However, for the HTML5 forms, there is no need to enclose the `<form>` controls in the `<form>` element.

HTML versus HTML5 forms

An HTML5 form provides two major advantages over previous versions. They are:

- Tedious scripting and styling of forms that was required in earlier versions of HTML was removed because HTML5's new `<form>` types and inbuilt validations takes semantic markup to the next level
- Even if scripting is disabled in the browser, users can experience the benefits of HTML5 forms

The form `<input>` types, elements, and attributes

The HTML5 forms focus on enhancing the existing simple HTML forms to encompass more types of controls and address the limitations that web developers face today. One of the best things about them is that you can use almost all the new input types, elements, and attributes right now and the HTML5 forms are fully backward compatible. The browser, which supports the new HTML5 elements, enhances their features, otherwise the browser, which does not support it, displays them as a textbox.

In this section, we will learn the new HTML5 `<form>` elements, such as the `<input>` types, elements, and attributes that are introduced to enhance the capabilities of forms.

The <form> <input> types

- **date:** The `date` type allows the user to select a date with no time zone.

It is supported in .

Syntax:

```
<input type= "date" name= "#">
```

Attributes:

- `value:` The initial value. The format is `yyyy-mm-dd`
 - `min, max:` The range in which the smallest and largest dates can be selected
- **datetime:** The `datetime` type allows the user to select a date and a time with the time zone set to UTC.

The format is `yyyy-mm-dd HH:MM`.

It is supported in .

Syntax:

```
<input type= "datetime" name= "#">
```

- **datetime-local:** The `datetime-local` type allows the user to select a date and time with no time zone. The format used is `yyyy-mm-dd HH:MM`.

It is supported in .

Syntax:

```
<input type= "datetime-local" name= "#">
```

- **color:** The `color` type results in opening a color chooser pop up and is used to choose a color of the `<input>` type `#rrggbb` (hex value). It could be represented by a swatch or a wheel picker.

The value chosen must be a valid simple color's hex value such as `#ffffff`.

It is supported in .

Syntax:


```
<input type= "color" id= "#"name= "#">
```

Attributes:

- value: The initial value
- number: The number type allows the user to input the numbers in either integer or floating point.

It is also called a spinner.

We can set restrictions on what numbers are accepted.

It is supported in .

Syntax:


```
<input type= "number" name= "#">
```

Attributes:

- value: The initial value
- min, max: The range in which the smallest and largest values can be selected with the up/down arrows
- step: This tells us how much to change the values when we scroll the spinner
- range: The range type allows the user to input the numbers in either integer or floating point from a range of numbers. It is displayed in the form of a slider.

Using this, the exact value is not shown unless you use JavaScript, so use `<input type="number" />` if you want the user to choose an exact value.

We can set restrictions on what numbers are accepted.

It is supported in .

Syntax:

```
<input type= "range" name= "#">
```


Attributes:

- value: The initial value. The default value is the mid of the slider.
- min, max: The range in which the smallest and largest values can be selected. The default for min is 0 and max is 100.
- step: This tells us how much to change the values when we scroll the spinner. The default is 1.

- **email:** The `email` type allows the user to enter the text in e-mail address format `email@example.com`.

The entered text is automatically validated when clicked on the **Submit** button.

If multiple attributes are specified, multiple e-mail addresses can be entered, separated by commas.

It is supported in .

Syntax:

```
<input type= "email" name= "#">
```

Attributes:

- `value`: The initial value (a legal e-mail address)

Using multiple attributes, that is, more than one e-mail ID, is accepted and each attribute is separated by a comma.

- **search:** The `<input type= search>` type allows the user to enter text that the user wants to search for.

A search field behaves like a standard text field and has inbuilt clear text functionality, such as the cross button in WebKit browsers.

It is supported in .

Syntax:

```
<input type= "search" name= "#">
```

Attributes:

- `value`: The initial value

- **tel:** The `tel` type allows the user to input a telephone number. `tel` does not provide any default syntax, so if you want to ensure a particular format, you can use `pattern` to do additional validation.

No browser support till now.

Syntax:

```
<input type= "tel" name= "#">
```

Attributes:

- `value`: The initial value as a phone number

- `month`: The `month` type allows the user to select a month and a year with no time zone.

It is supported in .

Syntax:

```
<input type= "month" name= "#" >
```

Attributes:

- `value`: The initial value. The format is yyyy-mm.
- `min`, `max`: The range in which the smallest and largest values can be selected.

- `time`: The `time` type allows the user to select a time value with hour, minutes, seconds, and fractional seconds with no time zone.


It is supported in .

Syntax:

```
<input type= "time" name= "#">
```

- `url`: The `url` type allows the user to input an absolute URL.

The entered text is automatically validated when clicked on the **Submit** button.

It is supported in .


Syntax:

```
<input type= "url" name= "#" >
```

Attributes:

- `value`: The initial value as an absolute URL

- `week`: The `week` type allows the user to select a week and a year with no time zone.

It is supported in .

Syntax:

```
<input type= "week" name= "#">
```

Attributes:

- `value`: The initial value. The format is yyyy-mmW.

So far we have learned about the various `<input>` types. Now let's see the new HTML5 `<form>` elements.

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