SEC201.2 Web-Based Programming

HTML Semantics, HTML Multimedia, HTML Forms

Outline

- HTML 5 Semantics
  - What are semantic elements?
  - New semantic elements in HTML5
  - HTML vs. HTML5
- HTML Multimedia
  - Images
  - Audio
  - Video
- HTML Forms
  - HTML Form Basics
  - More on Forms
  - Handling File Upload
  - Some New HTML5 Input Elements
  - Grouping
- Inspect the DOM with Chrome
- Tips: Layout & Design

What are Semantic Elements?

- **Semantics** is the study of the meanings of words and phrases in a language
  - **Semantic elements** = elements with a meaning

- A semantic element clearly describes its meaning to both the ***browser*** and the ***developer***
  - Examples of **non-semantic** elements: ** ** and ****
    - Tells nothing about its content
  - Examples of **semantic** elements: **<form>**, **<table>**, **<article>**, and **<section>**
    - Clearly defines its content

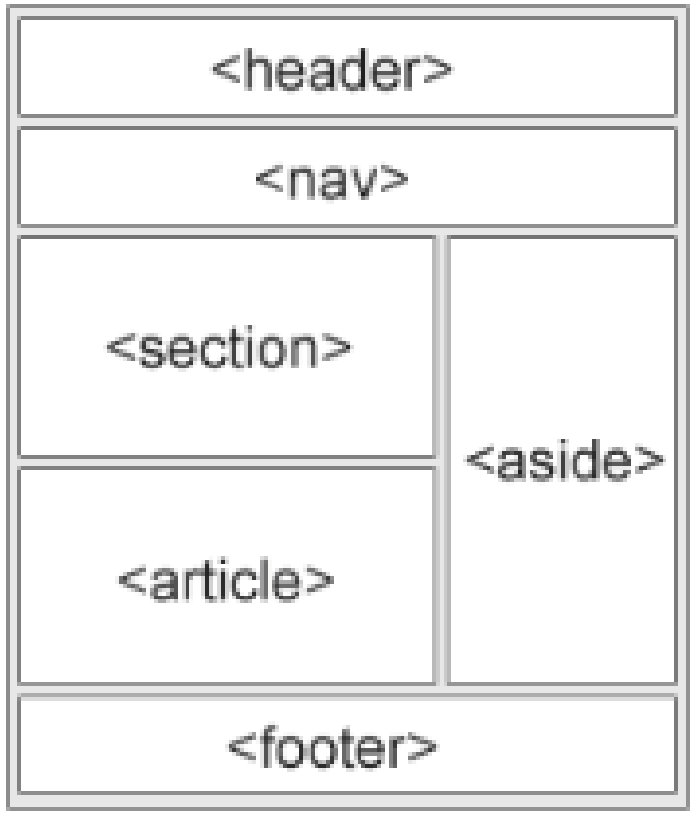
Semantic Elements in HTML5

- Websites often display content in multiple columns (like a magazine or newspaper)
- To indicate navigation, header, and footer many web sites contain HTML code like:

  , ,

- HTML5 offers new semantic elements to define different parts of a web page:

  - <article>
  - <aside>
  - <details>
  - <figcaption>
  - <figure>
  - <footer>
  - <header>
  - <main>
  - <mark>
  - <nav>
  - <section>
  - <summary>
  - <time>



Tag	Description
<article>	Defines an article. The <article> element specifies independent, self-contained content. An article should make sense on its own, and it should be possible to distribute it independently from the rest of the web site. Examples of where an <article> element can be used: *Forum post, blog post, newspaper article*
<aside>	Defines some content aside from the content it is placed in (like a sidebar). The <aside> content should be indirectly related to the surrounding content.
<details>	Defines additional details that the user can view or hide
<figcaption>	Defines a caption for a <figure> element
<figure>	Specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.
<footer>	Defines a footer for a document or section. A <footer> element typically contains: authorship information, copyright information, contact information, sitemap, back to top links, related documents

Tag	Description
<header>	Specifies a header for a document or section. The <header> element represents a container for introductory content or a set of navigational links. A <header> element typically contains: one or more heading elements, logo or icon, authorship information
<main>	Specifies the main content of a document
<mark>	Defines marked/highlighted text
<nav>	Defines a set of navigation links
<section>	Defines a section in a document. “A section is a thematic grouping of content, typically with a heading.” A web page could normally be split into sections for introduction, content, and contact information.
<summary>	Defines a visible heading for a <details> element
<time>	Defines a date/time

https://www.w3schools.com/html/html5_semantic_elements.asp

Why Semantic Elements?

- With HTML4, developers used their own ***id/class*** names to style elements: header, top, bottom, footer, menu, navigation, main, container, content, article, sidebar, topnav, etc.
- This made it impossible for search engines to identify the correct web page content
- With the new HTML5 elements (<header> <footer> <nav> <section> <article>), this become easier
- According to the W3C, a ***Semantic Web***: “Allows data to be shared and reused across applications, enterprises, and communities.”

HTML4 vs. HTML5

Typical HTML4	Typical HTML5
	<header>
	<nav>
	<section>
	<article>
	<footer>

Outline

- HTML 5 Semantics
  - What are semantic elements?
  - New semantic elements in HTML5
  - HTML vs. HTML5
- **HTML Multimedia**
  - **Images**
  - **Audio**
  - **Video**
- HTML Forms
  - HTML Form Basics
  - More on Forms
  - Handling File Upload
  - Some New HTML5 Input Elements
  - Grouping
- Inspect the DOM with Chrome
- Tips: Layout & Design

What is Multimedia?

- Multimedia on the web is sound, music, videos, movies, and animations
- Multimedia comes in many different formats
  - It can be almost anything you can hear or see, like images, music, sound, videos, records, films, animations, and more
  - Web pages often contain multimedia elements of different types and formats
- ***Browser Support***
  - The first web browsers had support for text only, limited to a single font in a single color
  - Later came browsers with support for colors, fonts, images, and multimedia!
- ***Multimedia Formats***
  - Multimedia elements (like audio or video) are stored in media files
  - The most common way to discover the type of a file, is to look at the file extension
  - Multimedia files have formats and different extensions like:

    .wav, .mp3, .mp4, .mpg, .wmv, and .avi

HTML Multimedia: Images

- HTML Image Elements & Attributes

<img> **src** attribute to define the URL of the image

alt attribute to define an alternative text for an image

width attribute

height attribute | **style** attribute → to define the size

<map> element to define an image-map

<area> element to define a clickable area inside an image-map

HTML Multimedia: Images

- Use **img** to bring an image into the web page

```
<img src="ESTU_Logo.png">
```

- Image with **alt** attribute
  - Defines an alternative text for an image, especially useful if the image cannot be loaded for some reason

```
<img src="ESTU_Logo.png" alt="Logo of Eskişehir Technical University">
```

Images – Controlling the Size

- Controlling the size
  - Add width="**number**" and height="**number**"

```
<img src="ESTU_Logo.png" alt="Logo of ESTU" width="300" height="150">
```

```
<img src="ESTU_Logo.png" alt="Logo of ESTU" width="300">
```

  - Add style="width:**number**px;height:**number**px;"

```
<img src="ESTU_Logo.png" alt="Logo of ESTU" style = "width:300px;height:150px;">
```

Notes on Images

- In HTML 4.01, the width could be defined in pixels or in % of the containing element
- In HTML5, the value must be in ***pixels***
- **Always specify the width and height of an image!**
  - If width and height are not specified, the page might flicker while the image loads
- Width and Height, or Style?
  - Both the width, height, and style attributes are valid in HTML5
  - However using the **style** attribute is suggested
  - It prevents styles sheets from changing the size of images

Images – Using an Image as a Link

- To use an image as a link, simply nest the **<img>** tag inside the **<a>** tag

```
<!-- Using an Image as a Link -->
<!-- To use an image as a link, simply nest the <img> tag inside the <a> tag  -->
<h3> The ESTU Logo is a link. You can click on it to visit Eskişehir Technical University
home page</h3>
<a href="http://eskisehir.edu.tr/">
  <img src="ESTU_Logo.png" alt="Logo of Eskişehir Technical University" style="width:300px;
      height:150px;">
</a>
```

HTML <figure> and <figcaption> Tags

- Use a **<figure>** element to mark up a photo in a document
- The <figure> element also contains a caption - **<figcaption>**

```
<!-- HTML <figure> and <figcaption> Tags -->
<!-- Use a <figure> element to mark up a photo in a document.
     The <figure> element also contains a caption - <figcaption>  -->

<figure>
 <img src="ESTU_Logo.png" alt="Logo of Eskişehir Technical University" style = "width:300px;
     height:150px;">
 <figcaption> Figure 1. - Eskişehir Technical University Logo</figcaption>
</figure>
```

The Map and Area Elements & Image Maps

- An image-map is an image with ***clickable areas***
- Use the **<map>** tag to define an image-map
- The areas are defined with one or more **<area>** tags
- The **name** attribute of the **<map>** tag is associated with the **<img>**'s **usemap** attribute and creates a relationship between the image and the map
- The **<map>** tag contains a number of **<area>** tags, that defines the clickable areas in the image-map

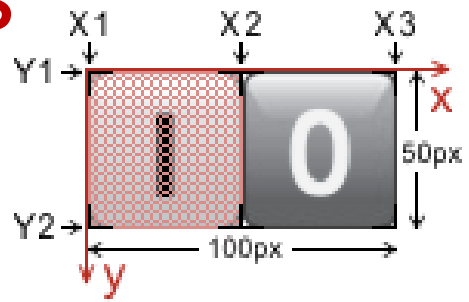
```
<img src="..." alt="…" usemap="#mypic">
<map name="mypic">
    <area shape="rect" coords="x1,y1,x2,y2" href="…" alt="...">
    <area shape="rect" coords="x2,y1,x3,y2" href="…" alt="...">
</map>
```

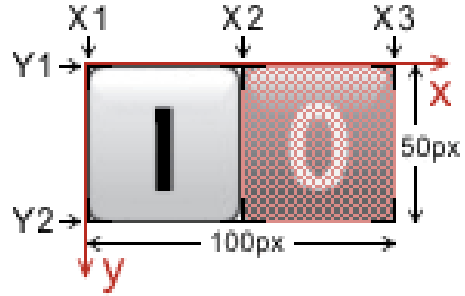
Shape

- rect
- circle
- poly
- default

https://www.w3schools.com/html/html_images_imagemap.asp

The Map and Area Elements & Image Maps





- Example:

```
      U L    L R
coords="x1,y1, x2,y2"
coords=" 0, 0, 50,50"
```

```
      U L    L R
coords="x2,y1, x3,y2"
coords="50, 0,100,50"
```

```
<!-- The Map and Area Elements & Image Maps -->
<img src="on-off.gif" alt="On Off" width="100" height="50" usemap="#on-off">
<map name="on-off">
    <area shape="rect" coords="0,0,50,50" href="http://eskisehir.edu.tr/" alt="Left" title="Left">
    <area shape="rect" coords="50,0,100,50" href="multimedia-images.html" alt="Right" title="Right">
</map>
```

HTML Multimedia: Audio

- Before HTML5, audio files could only be played in a browser with a plug-in (like flash)
- The HTML5 **<audio>** element specifies a standard way to embed audio in a web page

- HTML Audio Elements & Attributes
  - To play an audio file in HTML, use the **<audio>** element

<audio>	**controls** attribute
	loop attribute
	muted attribute
<source>	**src** attribute
	type attribute

HTML Multimedia: Audio – Handling Sound

```
<!-- To play an audio file in HTML, use the <audio> element -->
<audio controls>
    <source src="drum_loop.mp3" type="audio/mpeg">
    <source src="drum_loop.ogg" type="audio/ogg">
Your browser does not support the audio element.
</audio>
```

- **How it works?**
  - The **controls** attribute adds audio controls, like play, pause, and volume
  - The <**source**> element allows you to specify alternative audio files which the browser may choose from
    - The browser will use the first recognized format
  - The ***text*** between the <**audio**> and </**audio**> tags will only be displayed in browsers that do not support the <**audio**> element

HTML Multimedia: Audio – Handling Sound

- In HTML5, there are 3 supported audio formats: MP3, WAV, and OGG
  - The browser support for the different formats is

Browser	MP3	WAV	OGG
Edge/IE	Yes	Yes*	Yes*
Chrome	Yes	Yes	Yes
Firefox	Yes	Yes	Yes
Safari	Yes	Yes	No
Opera	Yes	Yes	Yes

*From Edge 79

- The **type** attribute specifies the media type
  - type="audio/mpeg", type="audio/ogg", type="audio/wav"

File Format	Media Type
MP3	audio/mpeg
OGG	audio/ogg
WAV	audio/wav

HTML Multimedia: Audio – Looping Sound

- Add loop to repeat the sound indefinitely with the **loop** attribute
  - A boolean attribute - when present, it specifies that the audio will start over again, every time it is finished

```
<audio controls loop>
    <source src="drum_loop.mp3" type="audio/mpeg">
    <source src="drum_loop.ogg" type="audio/ogg">
Your browser does not support the audio element.
</audio>
```

- **muted** attribute specifies that the audio output should be muted

```
<audio controls muted>
    <source src="drum_loop.mp3" type="audio/mpeg">
    <source src="drum_loop.ogg" type="audio/ogg">
Your browser does not support the audio element.
</audio>
```

HTML Multimedia: Audio – Sound in Older Browsers

- In general, for sound it's wise to use MP3 format sound
- This is supposed to work in all modern browsers
- Older browsers can't handle newer HTML tags
- To be friendly, we can warn the user

<some-new-html-tag>

*** Sorry, your browser can't handle some-new-html-tag ***

</some-new-html-tag>

  - An older browser ignores <some-newhtml--tag> because it doesn't understand it, but it does understand so it correctly displays the paragraph
  - A newer browser understands everything, but deliberately ignores the paragraph

```
<audio controls autoplay>
    <source src="drum_loop.mp3" type="audio/mpeg">
    <source src="drum_loop.ogg" type="audio/ogg">
    <p>Sorry! Your browser does not support the <i>audio</i> tag</p>
</audio>
```

HTML Multimedia: Video

- Before HTML5, a video could only be played in a browser with a plug-in (like flash)
- The HTML5 **<video>** element specifies a standard way to embed a video in a web page
- Handling video is very similar to handling audio

<video>	**autoplay** attribute
	controls attribute
	loop attribute
<source>	**src** attribute
	type attribute

HTML Multimedia: Video – Adding a Video

```
<video autoplay controls>
    <source src="mov_bbb.mp4" type="video/mp4" alt="Big Buck Bunny">
    <source src="mov_bbb.ogg" type="video/ogg" alt="Big Buck Bunny">
    <p> Your browser does not support HTML5 video. </p>
</video>
```

- **How it works?**
  - The **controls** attribute adds video controls, like play, pause, and volume
  - The <**source**> element allows you to specify alternative video files which the browser may choose from
    - The browser will use the first recognized format
  - The ***text*** between the <**video**> and </**video**> tags will only be displayed in browsers that do not support the <**video**> element

HTML Multimedia: Video – Adding a Video

- To start a video automatically use the **autoplay** attribute
- **width** and **height** attributes can be included
  - It is a good idea to always include width and height attributes
  - If height and width are not set, the page might flicker while the video loads

```
<video width="500" height="300" controls>
    <source src="mov_bbb.mp4" type="video/mp4" alt="Big Buck Bunny">
    <source src="mov_bbb.ogg" type="video/ogg" alt="Big Buck Bunny">
    <p> Your browser does not support HTML5 video. </p>
</video>
```

HTML Multimedia: Video Formats

- In HTML5, there are 3 supported audio formats: MP4, WebM, and OGG
  - The browser support for the different formats is

Browser	MP4	WebM	OGG
Edge	Yes	Yes	Yes
Chrome	Yes	Yes	Yes
Firefox	Yes	Yes	Yes
Safari	Yes	Yes	No
Opera	Yes	Yes	Yes

*From Edge 79

- The **type** attribute specifies the media type
  - type="video/mp4", type="video/ogg", type="video/webm"

File Format	Media Type
MP4	video/mp4
OGG	video/ogg
WebM	video/webm

HTML YouTube Videos

- You might have to convert your videos to different formats to make them play in all browsers
- Converting videos to different formats can be difficult and time-consuming
- An easier solution is to let YouTube play the videos in your web page
- YouTube Video Id
  - YouTube will display an id (like ***tgbNymZ7vqY***), when you save (or play) a video
  - You can use this id, and refer to your video in the HTML code

HTML YouTube Videos

How to Play a YouTube Video in HTML

To play your video on a web page, do the following:

- Upload the video to YouTube
- Take a note of the video id
- Define an <**iframe**> element in your web page
- Let the **src** attribute point to the video URL
- Use the **width** and **height** attributes to specify the dimension of the player
- Add any other parameters to the URL (autoplay, controls, loop, etc.)

HTML YouTube Videos

- Define an **<iframe>** element in your web page
- An **iframe** is used to display a web page within a web page

```
<iframe width="420" height="345" src="https://www.youtube.com/embed/tgbNymZ7vqY">
</iframe>
```

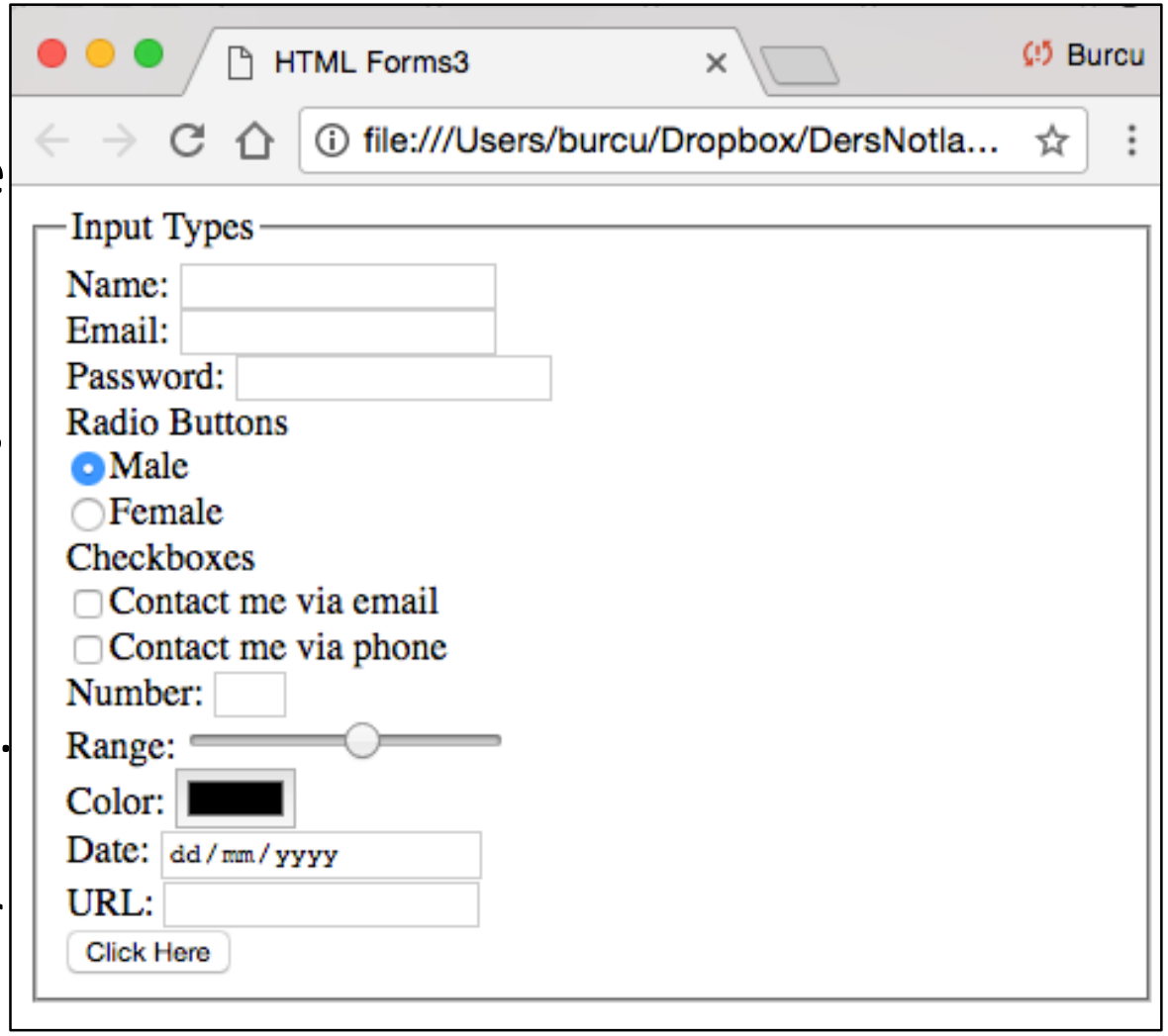
- YouTube – Autoplay, Muted, Loop
  - add simple parameters to your YouTube URL
  - src="https://www.youtube.com/embed/tgbNymZ7vqY?**autoplay=1**"
  - src="https://www.youtube.com/embed/tgbNymZ7vqY?**autoplay=1&mute=1**"
  - src="https://www.youtube.com/embed/tgbNymZ7vqY?playlist=tgbNymZ7vqY&**loop=1**"
  - src="https://www.youtube.com/embed/tgbNymZ7vqY?**controls=1**"

Outline

- HTML 5 Semantics
  - What are semantic elements?
  - New semantic elements in HTML5
  - HTML vs. HTML5
- HTML Multimedia
  - Images
  - Audio
  - Video
- **HTML Forms**
  - **HTML Form Basics**
  - **More on Forms**
  - **Handling File Upload**
  - **Some New HTML5 Input Elements**
  - **Grouping**
- Inspect the DOM with Chrome
- Tips: Layout & Design

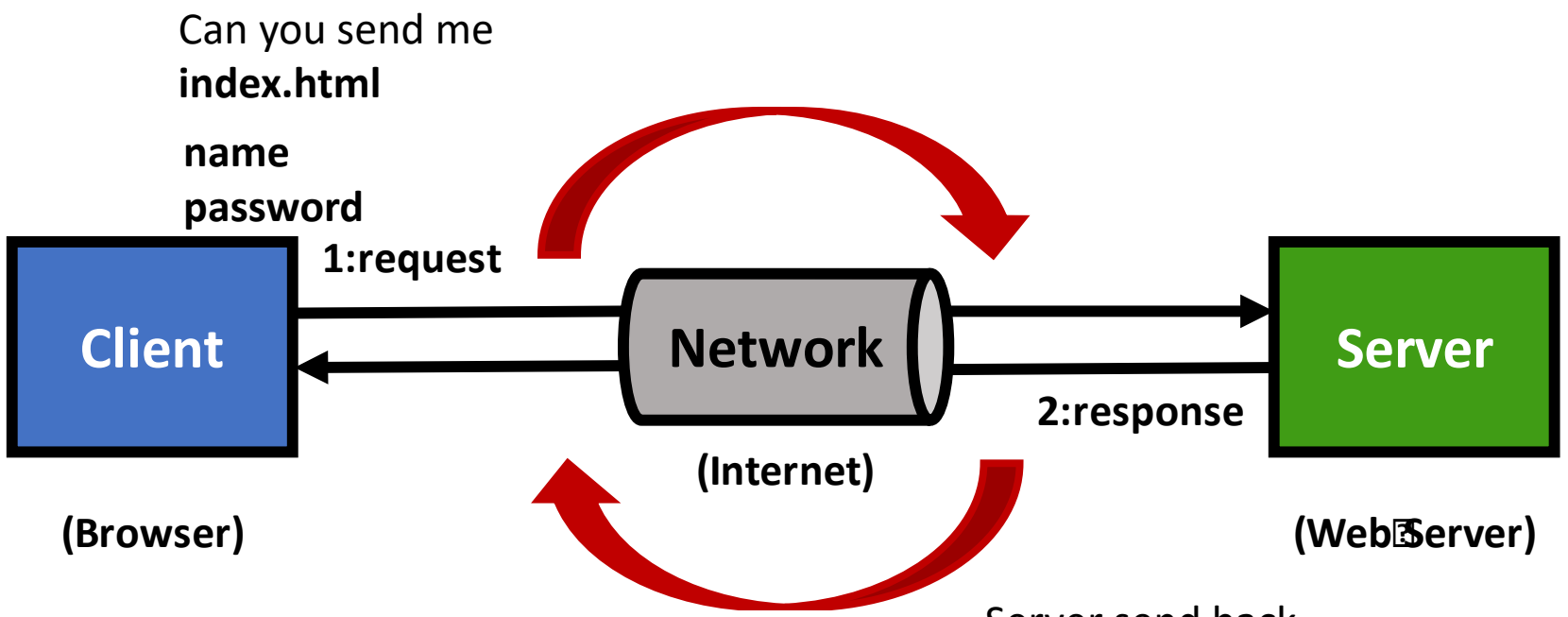
HTML Forms

- Forms are a great way to let you give people the opportunity to send you feedback
- Forms let us send additional information
  - Forms are used to collect user input, or pass data
  - How they can do that?
    - They let us put in different type of input elements, i.e. strings, numbers, files, etc.
- Forms must have server with them
  - The user input is most often sent to a server for processing



HTML Forms

- Forms add a new layer to the Request-Response Cycle



Forms lets us send that additional information

Web Development

- Front-end
  - What happens on the browser/client-side
  - How we want things to look on your laptop, on your phone, on your tablet
  - We do this using HTML, CSS, JavaScript

- Back-end
  - What the server is handling
  - Python, Ruby, PHP, Perl, Java

HTML Forms

- The HTML **<form>** element defines a form that is used to collect user inputs

```
<form>
.
form elements
.
</form>
```

- An HTML form contains ***form elements*** → container for different types of input elements, like *text fields*, *checkboxes*, *radio buttons*, *submit buttons*, and more

HTML Form Basics – Elements & Attributes

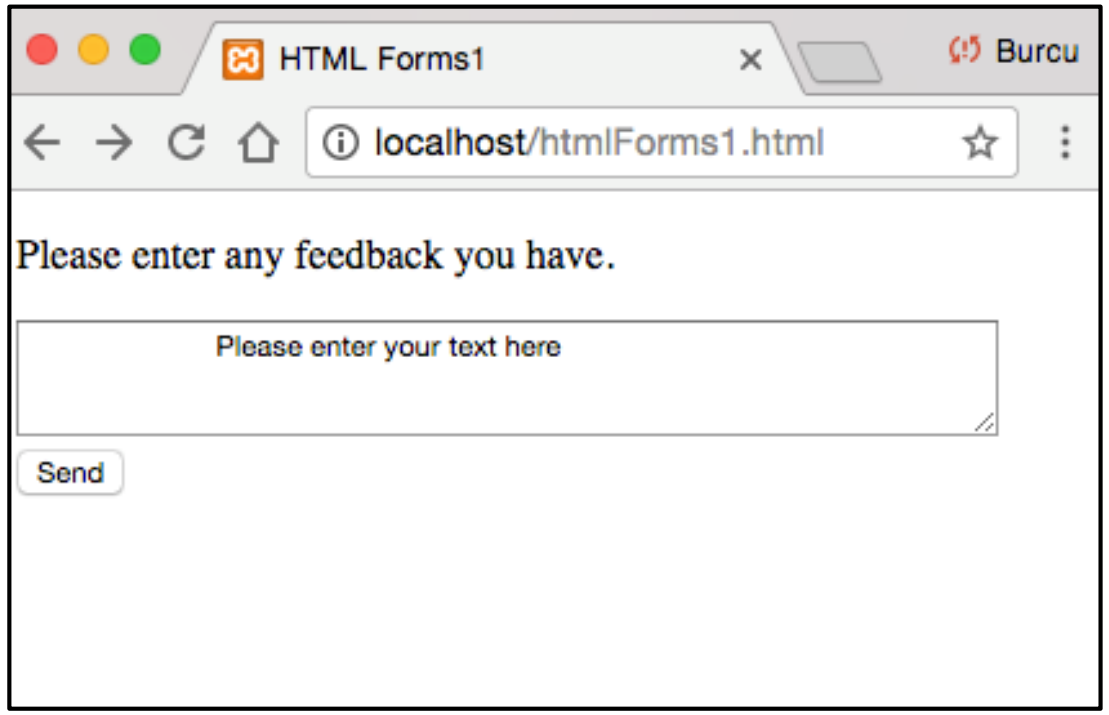
<form>

action attribute
method attribute
target attribute

form elements

<textarea>

<input type="submit">



Basic Form Structure

```
<form action="destination" method="get or post">
```

… form elements go here …

```
    <input type="submit">
```

```
</form>
```

Action Attribute – What is Destination?

action="destination" tells the browser

what program to send the form data to, e.g.:

```
<form action="http://www.server.com/subdirectory/program.php">
```

If the program is on same server as the html file:

```
<form action="subdirectory/program.php">
```

If the program is in same directory as the html file:

```
<form action="program.php">
```

Method Attribute – GET or POST

- The **method** attribute specifies the HTTP method (**GET** or **POST**) to be used when submitting the form data

<form action="program.php" method="get">

or

<form action="program.php" method="post">

GET or POST

method="**get**"

get is the ***default*** method

Example: search for **cats** using bing.com
The URL will be http://www.bing.com/search?**q=cats** . . .

The GET Method

- For a project you are developing, using get is a good idea
  - Seeing the form data in the URL is useful
- However, you cannot keep any secrets
  - When GET is used, the submitted form data will be **visible in the page address field**
- GET can only handle a small transmission, e.g. a few hundred letters/characters

Note: ***GET must NOT be used when sending sensitive information! GET is best suited for short, non-sensitive, amounts of data, because it has size limitations too!***

The POST Method

method="post"

- The main difference to GET is you cannot see any data
  - The POST method does **not display** the submitted form **data in the page address field**
- Using POST is better for keeping secrets
- POST can handle a big transmission, e.g. files

Note: Always use POST if the form data contains sensitive or personal information. POST has no size limitations, and can be used to send large amounts of data

HTML <textarea> Tag

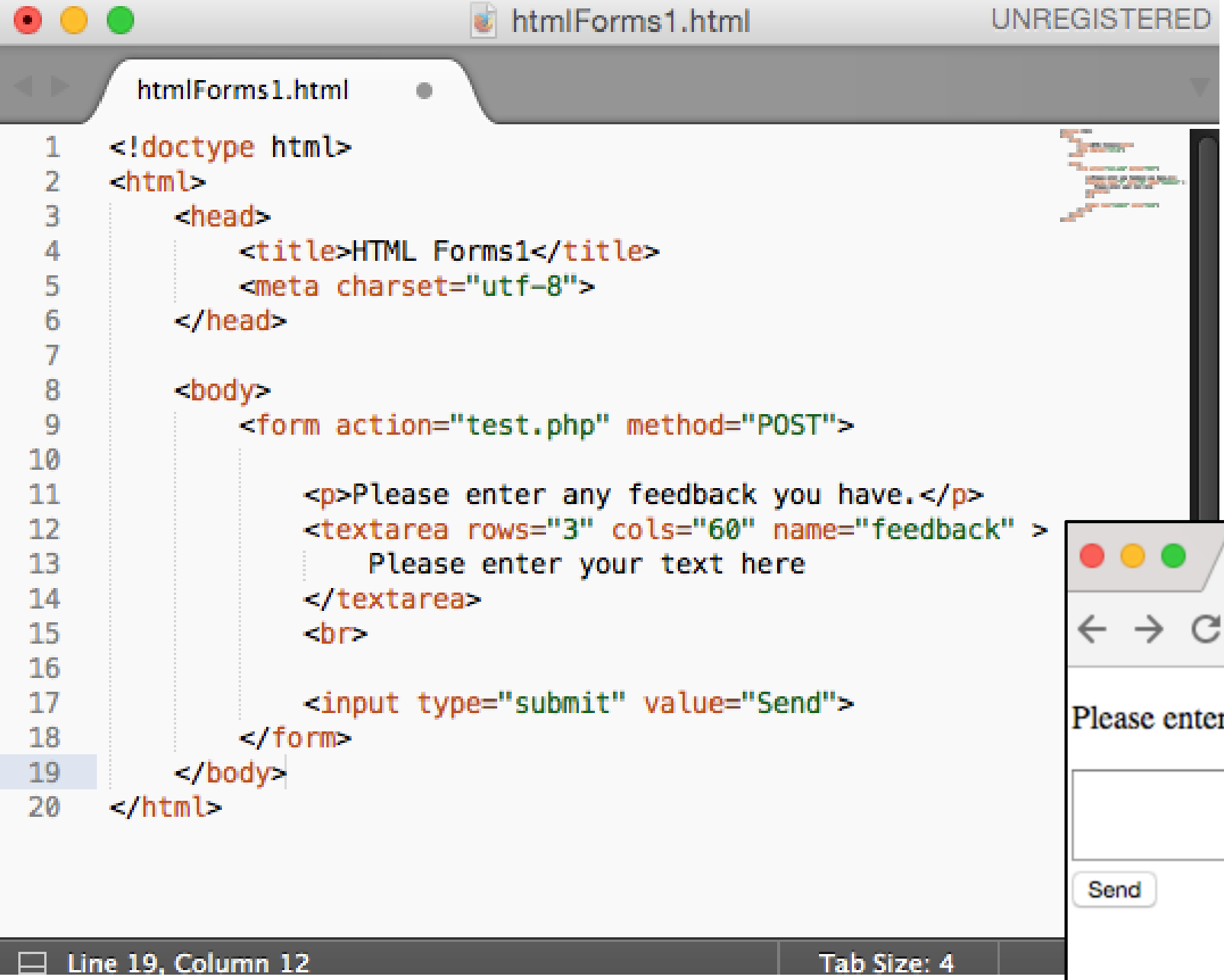
- The **<textarea>** tag defines a multi-line text input control
- A text area can hold an unlimited number of characters
- The size of a text area can be specified by the **cols** and **rows** attributes

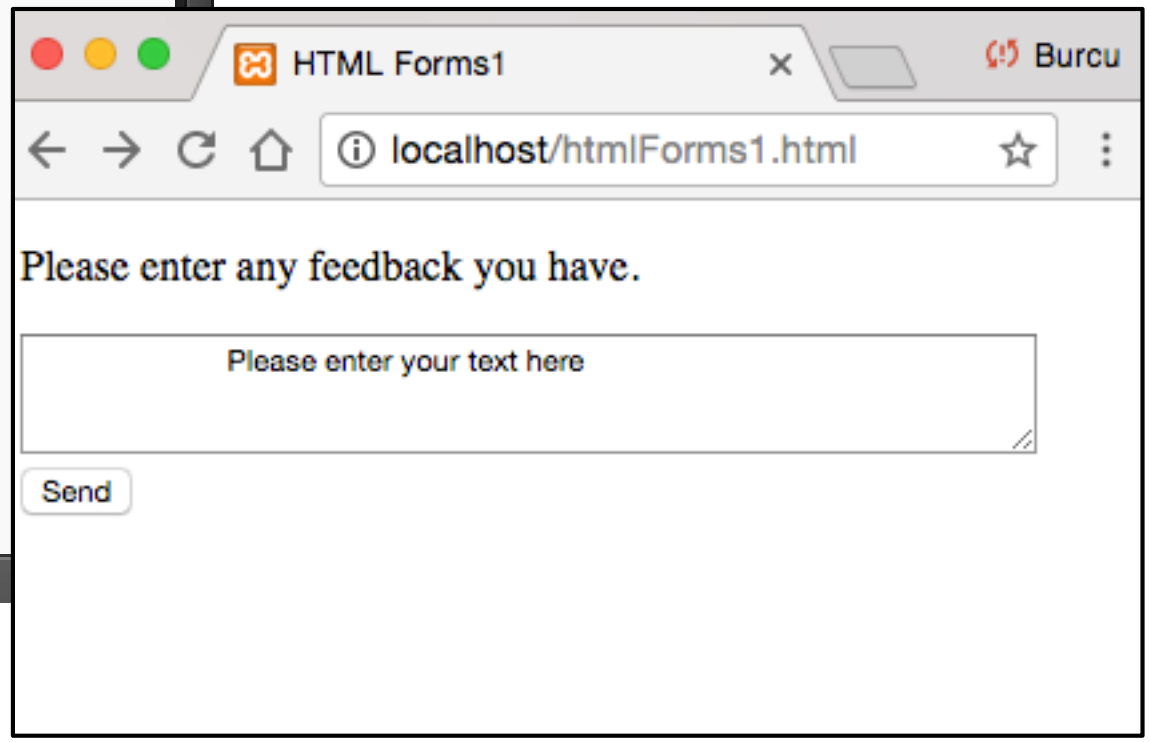
```
<textarea rows="3" cols="60" name="feedback" >
    Please enter your text here
</textarea>
```

The <input> Element

- The **<input>** element is the most important form element
- The <input> element can be displayed in several ways, depending on the **type** attribute

Type	Description
<input type="text">	Defines a one-line text input field
<input type="radio">	Defines a radio button (for selecting only one of many choices)
<input type="checkbox">	Defines a checkbox (for selecting 0 or more options of a limited number of choices)
<input type="submit">	Defines a submit button (for submitting the form)
<input type="password">	Defines a password field


htmlForms1.html
UNREGISTERED
htmlForms1.html
1 <!doctype html>
2 <html>
3 <head>
4 <title>HTML Forms1</title>
5 <meta charset="utf-8">
6 </head>
7
8 <body>
9 <form action="test.php" method="POST">
10
11 Please enter any feedback you have.
12 <textarea rows="3" cols="60" name="feedback" >
13 Please enter your text here
14 </textarea>
15
16
17 <input type="submit" value="Send">
18 </form>
19 </body>
20 </html>
Line 19, Column 12
Tab Size: 4


HTML Forms1
Burcu
localhost/htmlForms1.html
Please enter any feedback you have.
Please enter your text here
Send

More on Forms:
Form Elements have Different Attributes

- Form elements can have the following three attributes (most common)
  - **type**
  - **name**
  - **id**

- Some more attributes

  placeholder attribute

  value attribute

  autofocus attribute

  required attribute

Attributes

- **name**
  - Almost all input types should have a name attribute associated with it, in order to be submitted
    - Because that is the information sent to the server
    - If the name attribute is omitted, the data of that input field will not be sent at all
    - Very important for back-end development (on the server side)
  - The name attribute is assigned whatever value is input by the user
- **id**
  - Very important for front-end development
  - Used for labels
    - Identifies particular part of the form
    - So, you can make sure that when you click on the label, the right input value will be highlighted
  - Used by JavaScript

Additional Attributes

- **value**
  - A value attribute does different things depending upon which input type it's matched with
    - **button:** text inside the button
    - **textfield:** provides a default value
      - If not changed, will be the value passed to the server
- **placeholder**
  - Similar to value, but instead, it provides a suggestion
  - It is not an “official” value, just something you may want to do
    - In telephone numbers or anything where you want people to format things in a certain way
    - In the telephone field → (123) 456-7890
      - It's a suggestion
      - It's letting the person know what kind of input you're expecting
      - As soon as somebody clicks in there, it's gone, so it's not permanent

Useful Attributes

- **required**
  - Halts the submit process if any of the required elements are empty
  - Essentially says, hey, you can't submit this form if this particular input field is empty

    Ex: If you want someone to put in their password, you need to include required

    Else, people can just leave it empty, submit the forms without adding password
- **pattern**
  - Only works with **input type=text** and requires the input have a specific format
    - [0-9]{5} → You can only enter in numbers and there has to be five of them
    - [0-9]{13-16} → You can only enter in numbers, but they need to be between 13 and 16
    - [a-zA-Z]+ → You can only enter characters, which can be in lowercase a to z, or upper case A to Z. And plus means, there has to be at least one character.

      "Regular Expressions"
    - Best way is use the pattern attribute with placeholder and supporting text to let people know the format they need to use

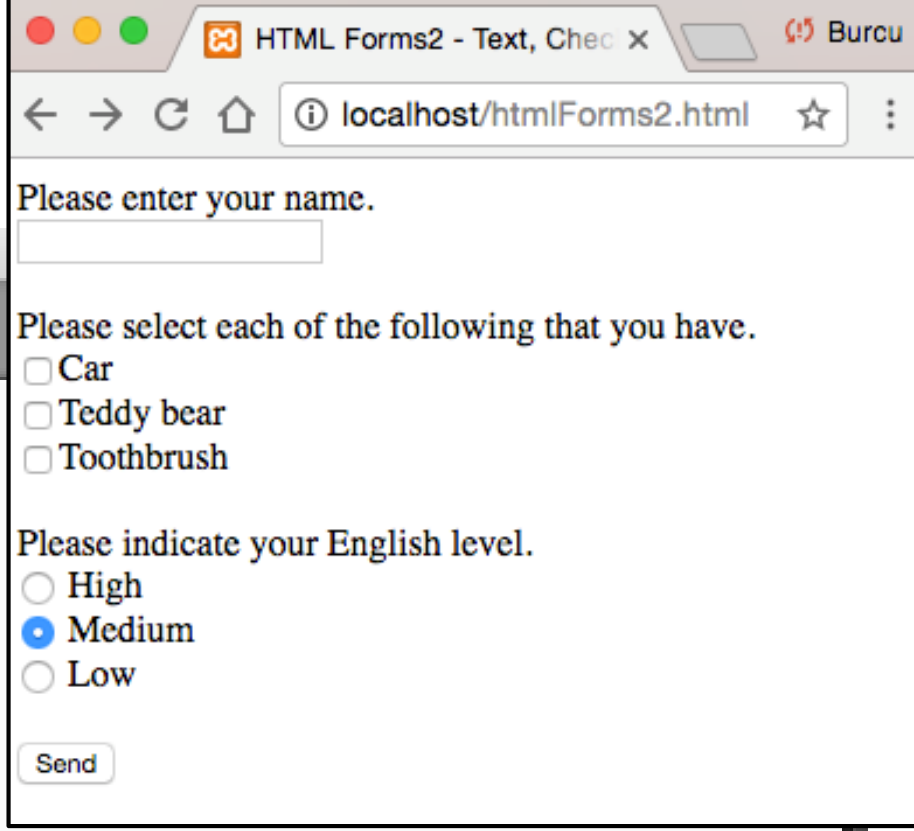
Useful Attributes

- **size**="*something*" → specifies the size (in characters) for the input field
- **autofocus** → sets which field is given focus at the start
- **autocomplete**="on/off" → specifies whether a form or input field should have autocomplete on or off
  - When autocomplete is on, the browser automatically complete the input values based on values that the user has entered before
- **min**, **max**, and **step** can place limits on number inputs
  - min → You can't enter a number that's less than 3
  - max → You can't enter a number over 100
  - step → You can only enter in increments of 5, or increments of 10

Example: Text, Checkbox & Radio

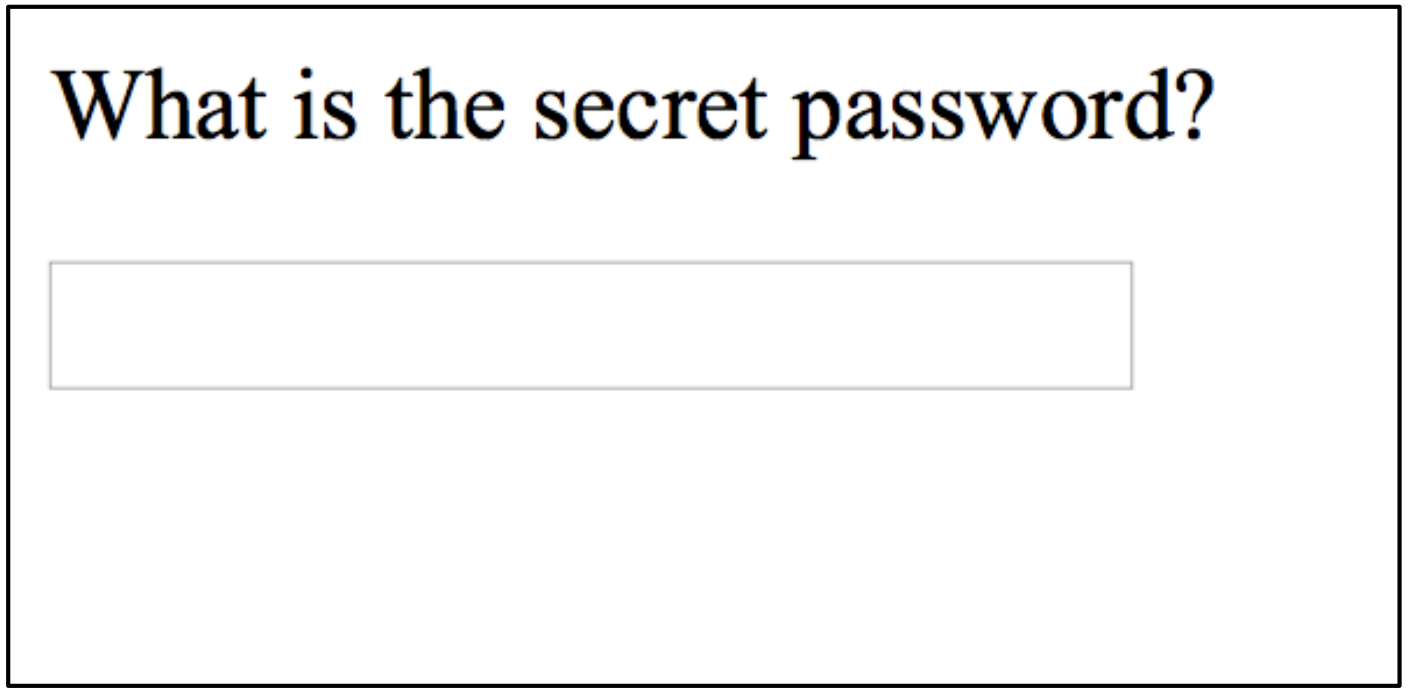
htmlForms2.html

```
3       <head>
4           <title>HTML Forms2 - Text, Checkbox, Radio</title>
5           <meta charset="utf-8">
6       </head>
7
8       <body>
9           <form action="test.php" method="get">
10              Please enter your name. <br>
11              <input type="text" name="feedback"> <br> <br>
12
13              Please select each of the following that you have. <br>
14              <input type="checkbox" name="item_car" value="car">Car <br>
15              <input type="checkbox" name="item_teddybear" value="teddy bear">Teddy bear <br>
16              <input type="checkbox" name="item_toothbrush" value="toothbrush">Toothbrush <br> <br>
17
18              Please indicate your English level. <br>
19              <input type="radio" name="iq" value="high"> High <br>
20              <input type="radio" name="iq" value="medium" checked> Medium <br>
21              <input type="radio" name="iq" value="low"> Low <br> <br>
22
23              <input type="submit" value="Send">
24          </form>
25      </body>
26  </html>
```



Example: Password

```
<form>
    <p>What is the secret password?</p>
    <input type="password" name="userpassword"> <br>
</form>
```



Example: Password – Be Careful!

htmlForms3.html UNREGISTERED

htmlForms3.html

```
1  <!doctype html>
2  <html>
3      <head>
4          <title>HTML Forms3 - Password</title>
5          <meta charset="utf-8">
6      </head>
7
8      <body>
9          <form action="test.php">
10             <p>What is the secret password?</p>
11             <input type="password" name="userpassword"> <br>
12
13             <input type="submit" value="Send">
14         </form>
15     </body>
16 </html>
```

Line 16, Column 8 Tab Size: 4 HTML

What is WRONG?

HTML5 <select> Element – new tag: Selecting From a List

- The **<select>** element defines a **drop-down list**
- The **<option>** elements defines an option that can be selected
  - By default, the first item in the drop-down list is selected
  - To define a pre-selected option, add the **selected** attribute to the option

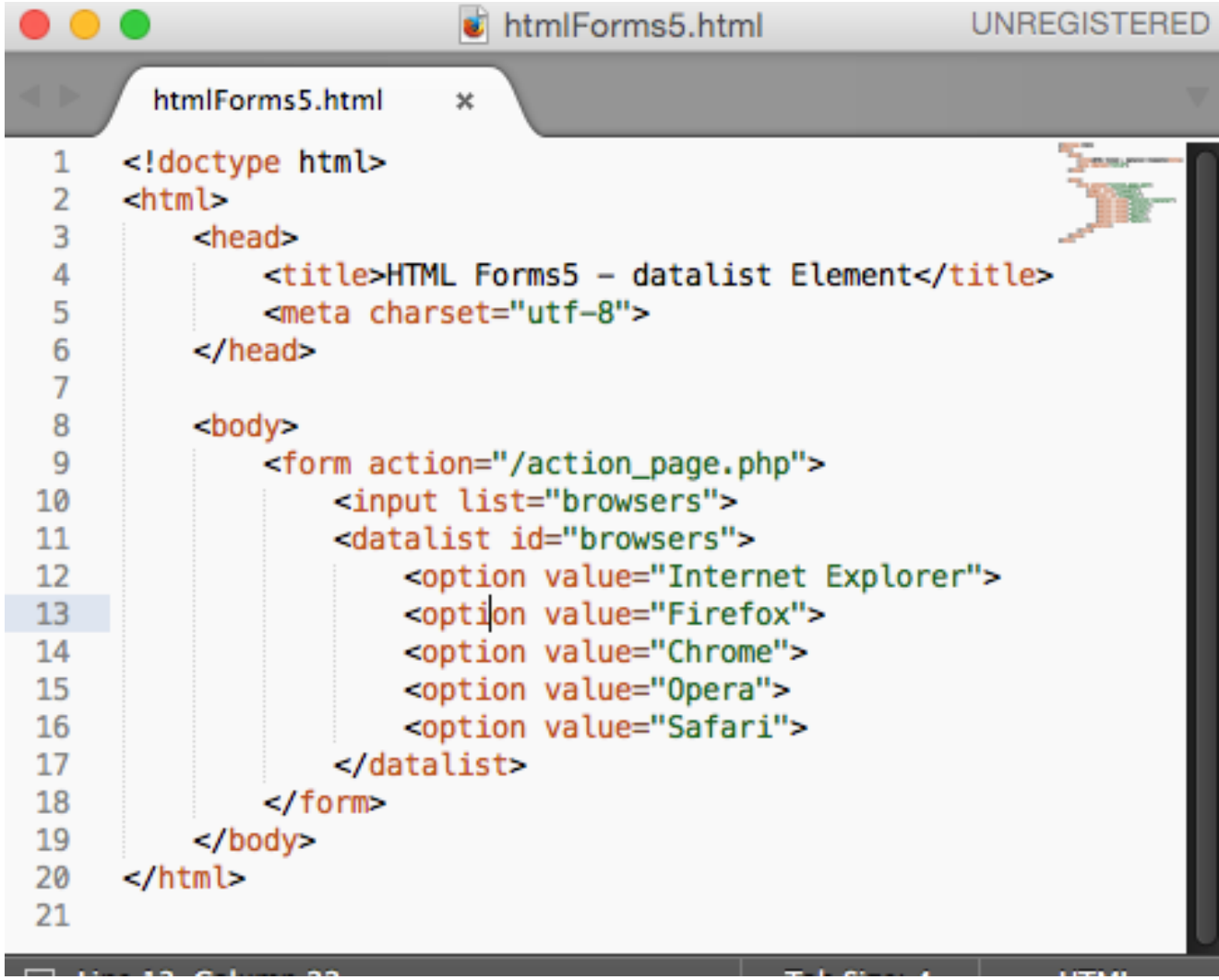
htmlForms4.html — UNREGISTERED

htmlForms4.html

```
1  <!doctype html>
2  <html>
3      <head>
4          <title>HTML Forms4 - Selecting From a List</title>
5          <meta charset="utf-8">
6      </head>
7
8      <body>
9          <form>
10             <p> Which city would you like to go to? </p>
11             <select name="cities">
12                 <option value="hk">Hong Kong</option>
13                 <option value="vc">Vancouver</option>
14                 <option value="sf">San Francisco</option>
15             </select>
16
17             <input type="submit" value="Send">
18         </form>
19     </body>
20 </html>
```

HTML5 <datalist> Element – new tag

- The **<datalist>** element specifies a list of pre-defined options for an <input> element
- Users will see a drop-down list of the pre-defined options as they input data
- The **list** attribute of the <input> element, must refer to the **id** attribute of the <datalist> element



Example: <label> element

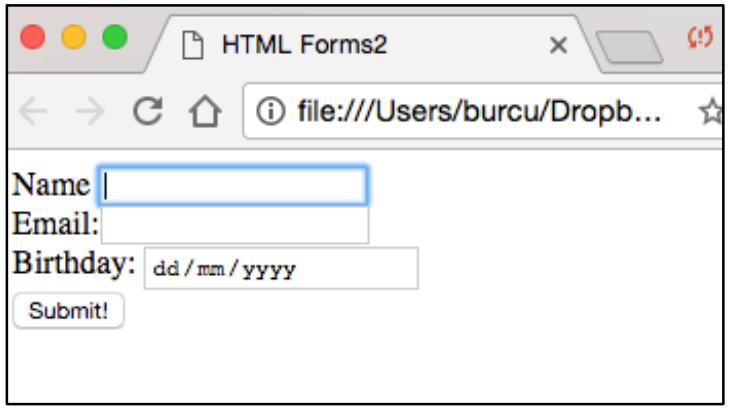
Matches different text on the screen with the actual input that the user puts in


```
            <form>
                <p>Please fill in the following information:</p>

                <label for="firstname">First name:</label>
                <input type="text" id="firstname" name="firstname" value="BIM222" autofocus>
                <br>

                <label for="lastname">Last name:</label>
                <input type="text" id="lastname" name="lastname"
                    placeholder="Your last name goes here" size="40">
                <br>

                <label for="age">Age:</label>
                <input type="text" id="age" name="age" required>
                <br>

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

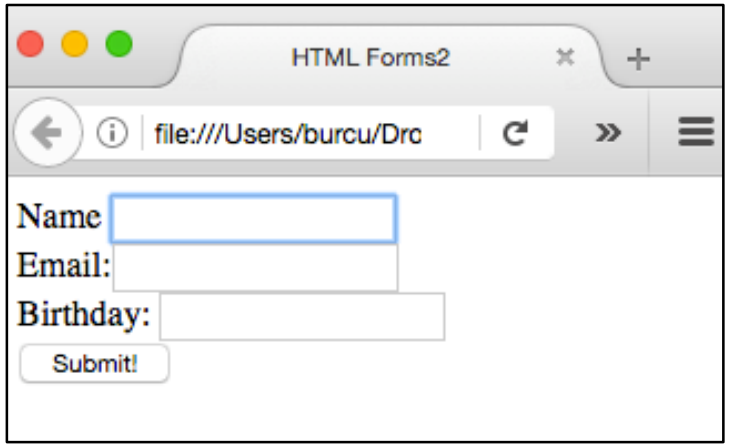
Example: HTML Form – linking label and input

```
<!doctype html>
<html>
    <head>
        <title>HTML Forms2</title>
        <meta charset="utf-8">
    </head>

    <body>
        <form>

            <label for='name'>Name</label>
            <input type='text' id='name' name='name'><br>

            <label>Email:<input type='email' name='email'></label><br>

            <label for="birthday">Birthday:</label>
            <input type="date" id="birthday" name="birthday"><br>

            <input type="submit" value="Submit!">

        </form>
    </body>
</html>
```

CHROME



FIREFOX



Handling File Uploads

<input type="file">

- Uploading Files
  - Two parts: the browser and the server
- Uploading Files - Form Structure

Specifies how the form-data should be encoded when submitting it to the server (only for method="post")

```
<form action="destination" method="post" enctype="multipart/form-data">
```

… other form input elements go here, if any …

```
    <input type="file" name="fileToUpload"> <br>
```

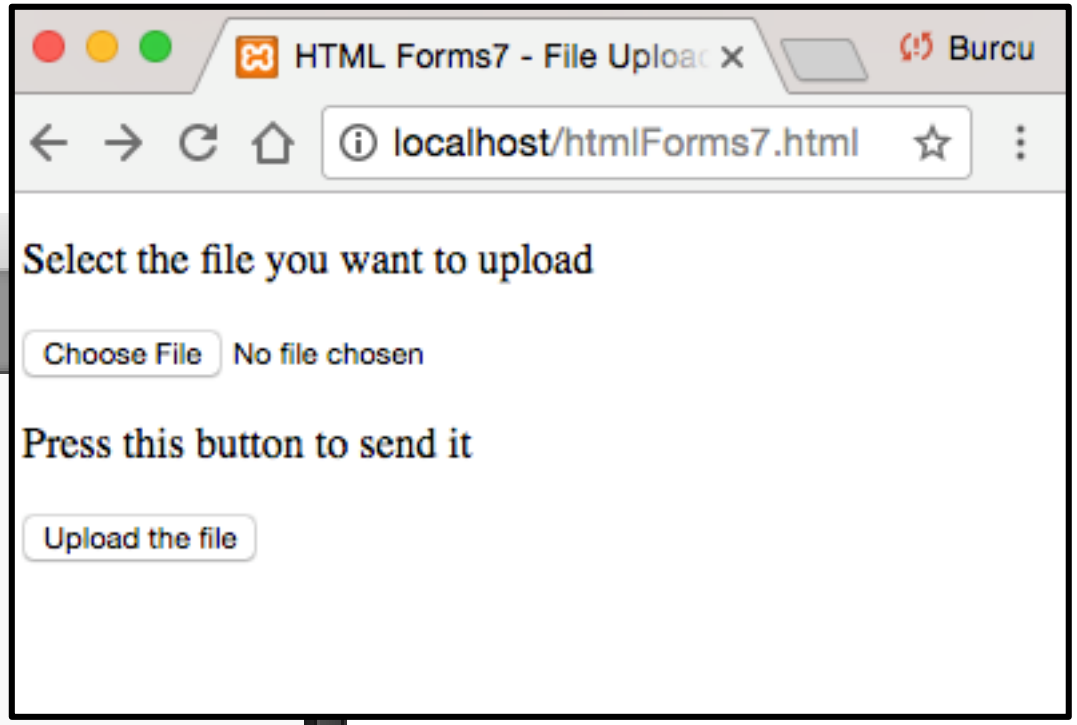
```
    <input type="submit">
```

```
</form>
```

File Upload Example

htmlForms7.html

```
1  <!doctype html>
2  <html>
3      <head>
4          <title>HTML Forms7 - File Upload Example</title>
5          <meta charset="utf-8">
6      </head>
7
8      <body>
9
10         <form method="post" enctype="multipart/formdata"
11                 action="test.php">
12
13             <p>Select the file you want to upload</p>
14                 <input type="file" name="fileToUpload">
15                 <p>Press this button to send it</p>
16                 <input type="submit" value="Upload the file">
17         </form>
18     </body>
19 </html>
```



File Upload - The Server Program

- The file is given to the required server program
- The server program may do several things
  - It may move the file into another directory
  - It may save the file in a database

Some More New HTML5 Input Elements

Number Input	<input type="number">
Date Input	<input type="date">
Time Input	<input type="time">
Color Picker	<input type="color">
Slider	<input type="range">
Email	<input type="email">
Search	<input type="search">
Telephone	<input type="tel">
URL	<input type="url">

Some New HTML5 Input Elements

- Input Type Number
  - Defines a **numeric** input field
  - With **min** and **max** attributes restrictions can be set on what numbers are accepted
- Input Type Date
  - Used for input fields that should contain a date
  - Depending on browser support, a date picker can show up in the input field
  - With **min** and **max** attributes restrictions can be add to dates
- Input Type Time
  - Allows the user to select a time (no time zone)
  - Depending on browser support, a time picker can show up in the input field

Some New HTML5 Input Elements

- Input Type Color
  - Used for input fields that should contain a color
  - Depending on browser support, a color picker can show up in the input field
- Input Type Range
  - Defines a control for entering a number whose exact value is not important (like a slider control)
  - Default range is 0 to 100.
  - However, restrictions can be set on what numbers are accepted with the **min**, **max**, and **step** attributes
- Input Type Email
  - Used for input fields that should contain an e-mail address
  - Depending on browser support, the e-mail address can be automatically validated when submitted

Some New HTML5 Input Elements

- Input Type Search
  - Used for search fields (a search field behaves like a regular text field)
- Input Type Tel
  - Used for input fields that should contain a telephone number
  - The tel type is currently supported only in Safari 8
- Input Type Url
  - Used for input fields that should contain a URL address
  - Depending on browser support, the url field can be automatically validated when submitted

Example

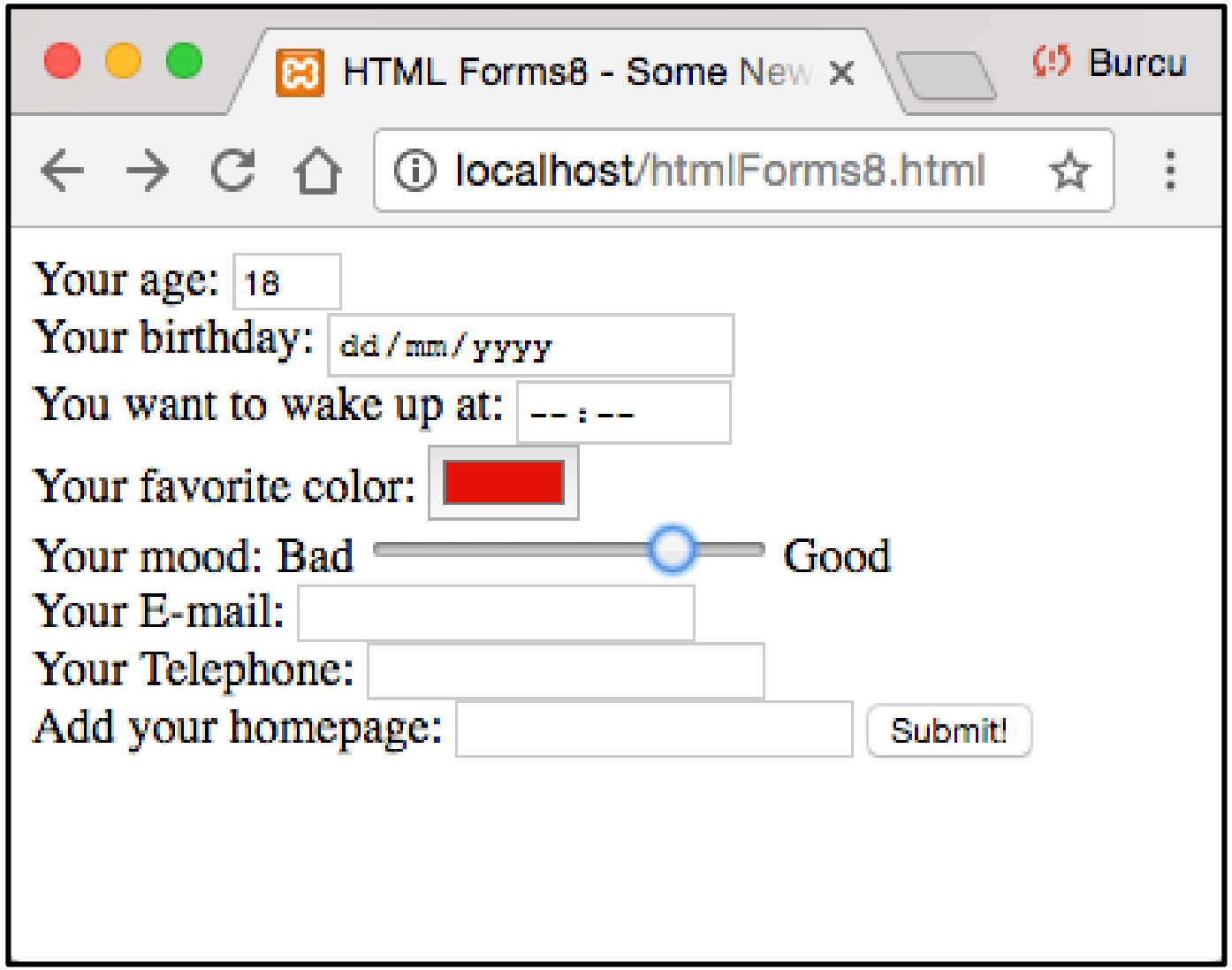
htmlForms8.html

UNREGISTERED

htmlForms8.html

```
<!doctype html>
<html>
    <head>
        <title>HTML Forms8 - Some New HTML5 Input Elements</title>
        <meta charset="utf-8">
    </head>

    <body>
        <form action="test.php">
            <label for="age">Your age:</label>
            <input type="number" min="0" max="99" step="1" value="18" id="age" name="age" required><br>

            <label for="birthday">Your birthday:</label>
            <input type="date" id="birthday" name="birthday"><br>

            <label for="wakeup">You want to wake up at:</label>
            <input type="time" id="wakeup" name="wakeup"><br>

            <label for="color">Your favorite color:</label>
            <input type="color" id="color" name="color"> <br>

            <label for="mood">Your mood:</label>
            Bad <input type="range" min="0" max="100" step="5" value="50" id="mood" name="mood"> Good <br>

            <label for="email">Your E-mail:</label>
            <input type="email" id="email" name="email"><br>

            <label for="usrtel">Your Telephone:</label>
            <input type="tel" id="usrtel" name="usrtel"><br>

            <label for="homepage">Add your homepage:</label>
            <input type="url" id="homepage" name="homepage">

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

Example


HTML Forms8 - Some New
Burcu
localhost/htmlForms8.html
Your age: 18
Your birthday: dd / mm / yyyy
You want to wake up at: -- : --
Your favorite color:
Your mood: Bad Good
Your E-mail:
Your Telephone:
Add your homepage:
Submit!

Element Grouping

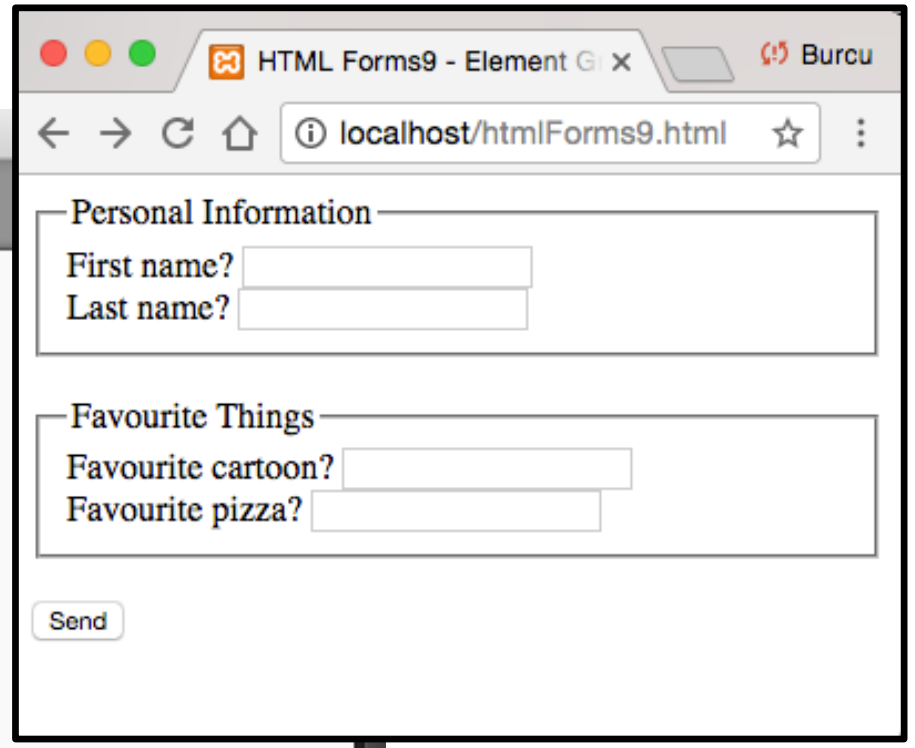
Grouping things	<fieldset>
Giving a title	<legend>

- The **<fieldset>** tag is used to group related elements in a form
- The <fieldset> tag draws a box around the related elements
- The **<legend>** tag defines a caption for the <fieldset> element

An Example Using Form Inputs

htmlForms9.html

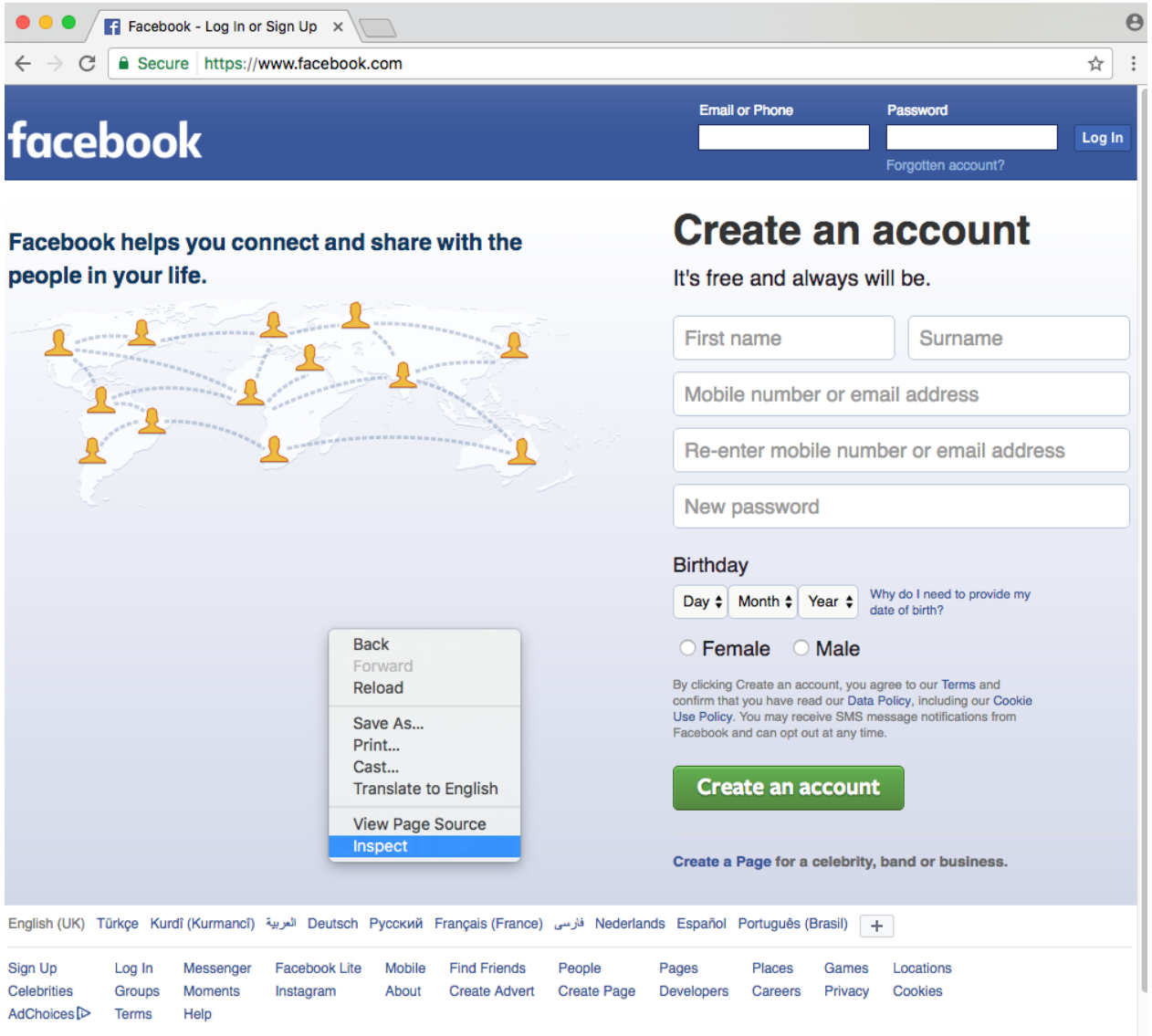
```
1  <!doctype html>
2  <html>
3      <head>
4          <title>HTML Forms9 - Element Grouping</title>
5          <meta charset="utf-8">
6      </head>
7
8      <body>
9          <form action="test.php">
10             <fieldset>
11                 <legend>Personal Information</legend>
12                 First name? <input type="text" name="firstName"> <br>
13                 Last name? <input type="text" name="lastName"> <br>
14             </fieldset> <br>
15
16             <fieldset>
17                 <legend>Favourite Things</legend>
18                 Favourite cartoon? <input type="text" name="favCartoon"> <br>
19                 Favourite pizza? <input type="text" name="favPizza"> <br>
20             </fieldset> <br>
21
22             <input type="submit" value="Send">
23         </form>
24     </body>
25 </html>
26
```

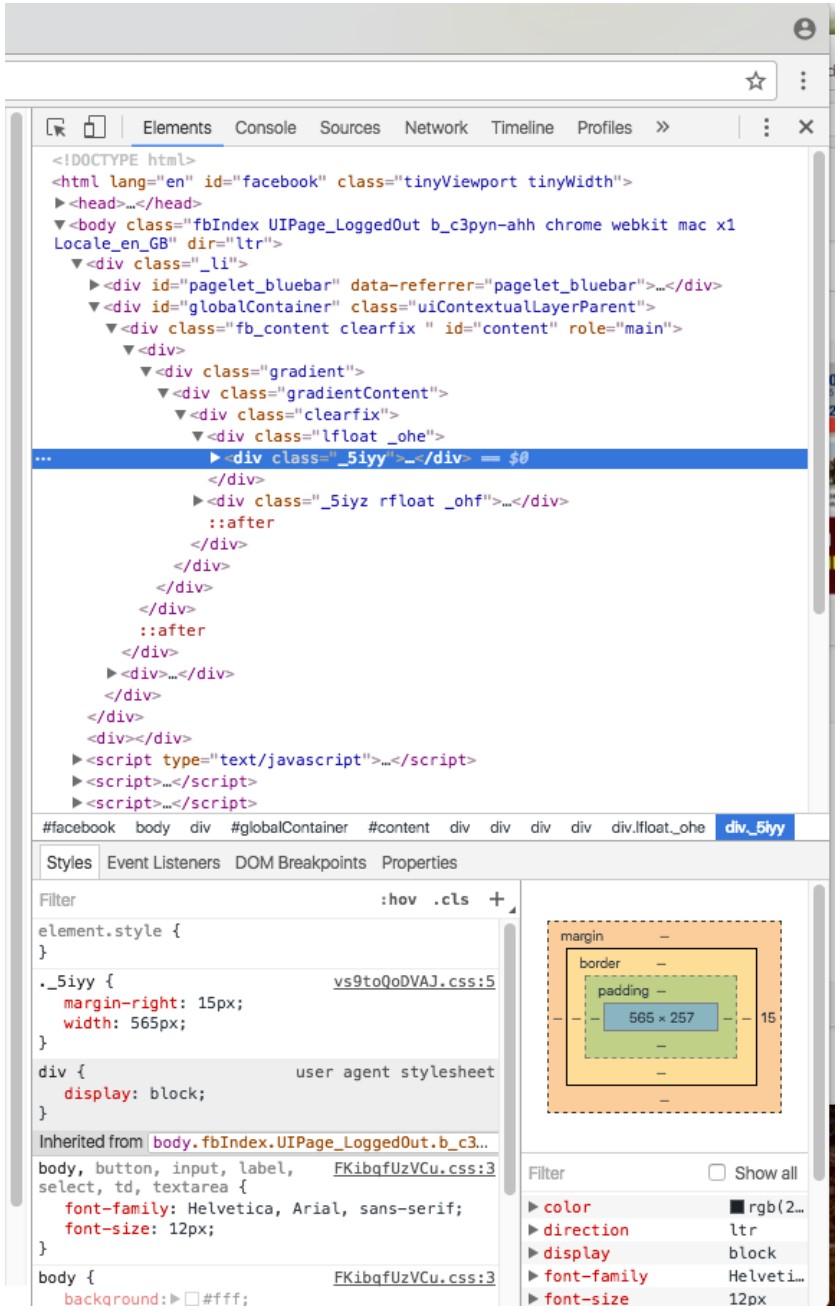


Outline

- HTML 5 Semantics
  - What are semantic elements?
  - New semantic elements in HTML5
  - HTML vs. HTML5
- HTML Multimedia
  - Images
  - Audio
  - Video
- HTML Forms
  - HTML Form Basics
  - More on Forms
  - Handling File Upload
  - Some New HTML5 Input Elements
  - Grouping
- **Inspect the DOM with Chrome**
- Tips: Layout & Design

Inspect the DOM with Google Chrome





Outline

- HTML 5 Semantics
  - What are semantic elements?
  - New semantic elements in HTML5
  - HTML vs. HTML5
- HTML Multimedia
  - Images
  - Audio
  - Video
- HTML Forms
  - HTML Form Basics
  - More on Forms
  - Handling File Upload
  - Some New HTML5 Input Elements
  - Grouping
- Inspect the DOM with Chrome
- **Tips: Layout & Design**

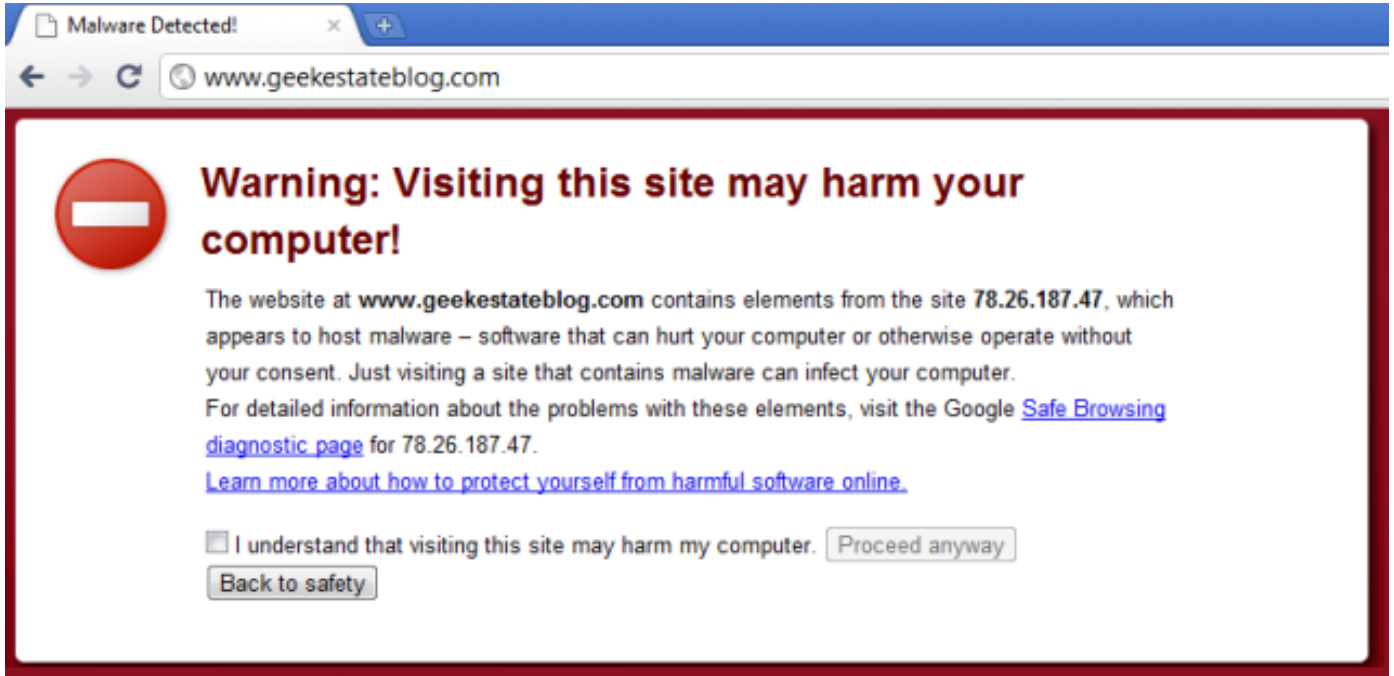
Tips: Layout & Design

The Good, the Bad and the Ugly – in Web Design

- The Good

  http://minimums.com/

- The Bad

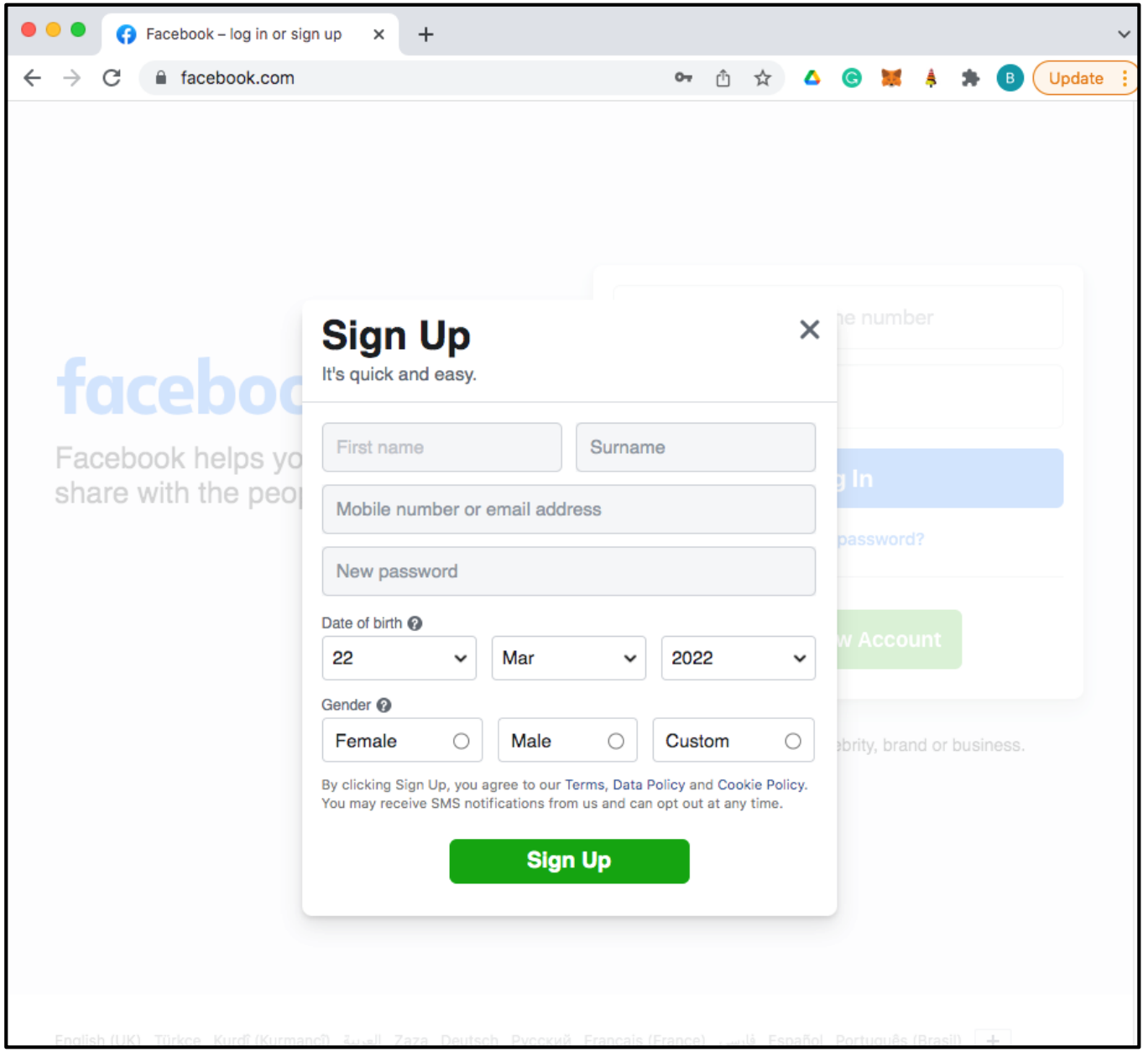


Tips: Layout & Design

- The Ugly

  http://theworldsworstwebsiteever.com/

Tips: Layout


Facebook – log in or sign up
facebook.com
Update
Sign Up
It's quick and easy.
First name
Surname
Mobile number or email address
New password
Date of birth
22
Mar
2022
Gender
Female
Male
Custom
By clicking Sign Up, you agree to our Terms, Data Policy and Cookie Policy.
You may receive SMS notifications from us and can opt out at any time.
Sign Up

Tips: Layout – Responsive Design

- Goal is to provide an optimal viewing and interaction experience across a wide range of devices, from desktop to mobile phones
- Adapt the layout to support easy reading and navigation with a minimum of resizing, panning, and scrolling
- The design uses fluid, proportion-based grids, flexible images, and CSS3 media queries

https://www.freshbooks.com/

Wireframing

https://www.lucidchart.com/pages/landing/wireframe_tool?utm_source=google&utm_medium=cpc&utm_campaign=wireframing_poland&gclid=CjwKEAiAxKrFBRDm25f60OegtwwSJABgEC-Z3aKB1VU_u4GfGyEmWBumIp90WQqRC--guseHYg9bNRoC7tzw_wcB

Mockup

- A storyboard that steps through a mock user experience that details significant expected behaviors both from a user interface and application semantic
- Not just wire frames
  - a walk through
  - wire frames / UI mockups can be included
  - but digs a bit deeper and describes the value proposition for the user
- Some popular mockup tools
  - https://www.uxpin.com/
  - https://moqups.com/
  - https://balsamiq.com/products/mockups/

Navigational Structure