HTML

2/2562

HTML

- Web page creation
- Main idea: **use elements to structure the content**
- Several version
  - Current version: HTML5
- HTML/XHTML
  - Will explain later

Hypertext Markup Language

- Tags, Elements and Attributes

  - Tags = tokens enclosed by angle brackets - < >

  - Elements define the structure of document and lay the foundation for its presentation and manipulation, contained within one or two tags

  - Attributes = Tag modifiers compose of 2 parts: name and value

- Mostly case insensitive and not necessary to quote the value part of the attributes
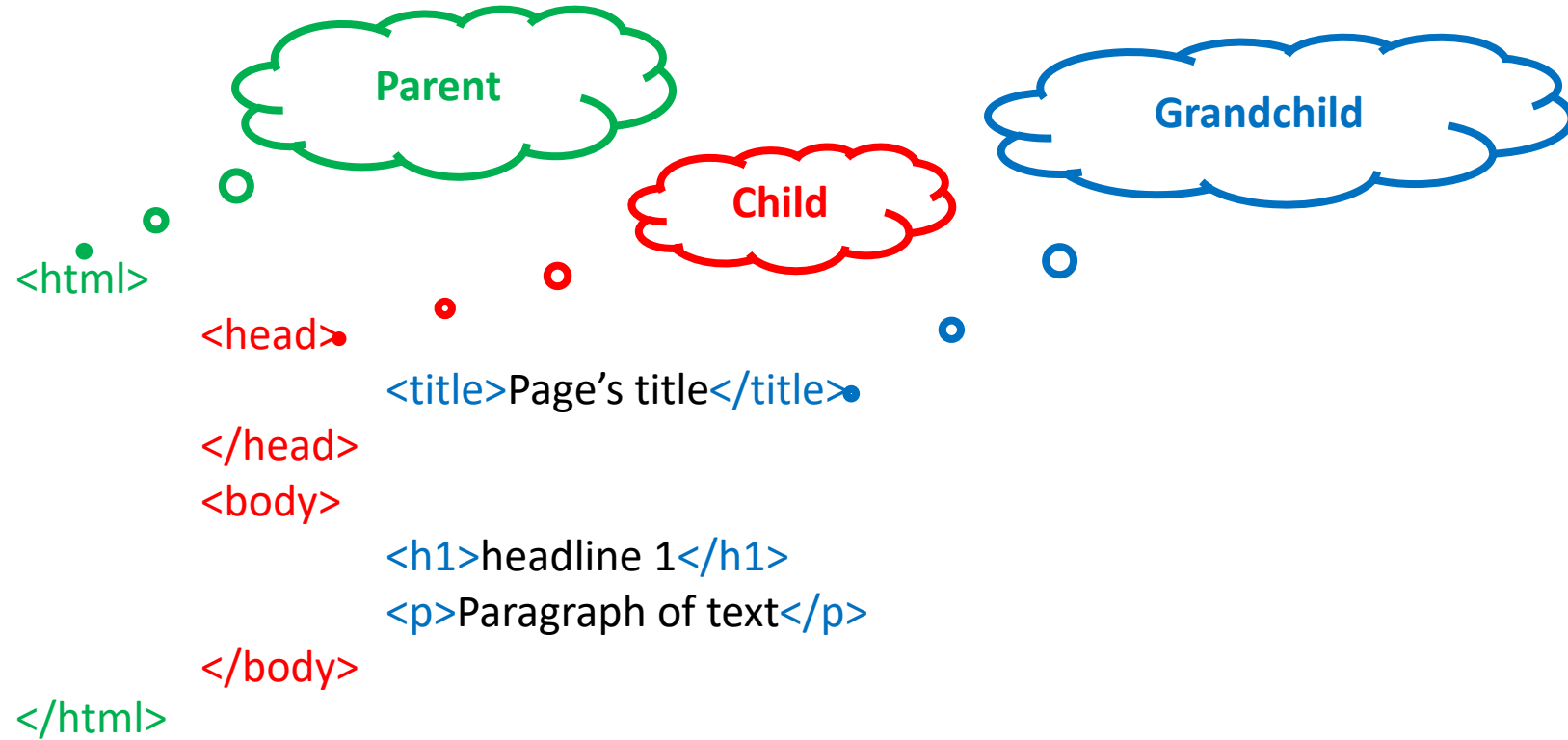
Element

Computer Engineering

Attribute

Closing tag

Opening tag

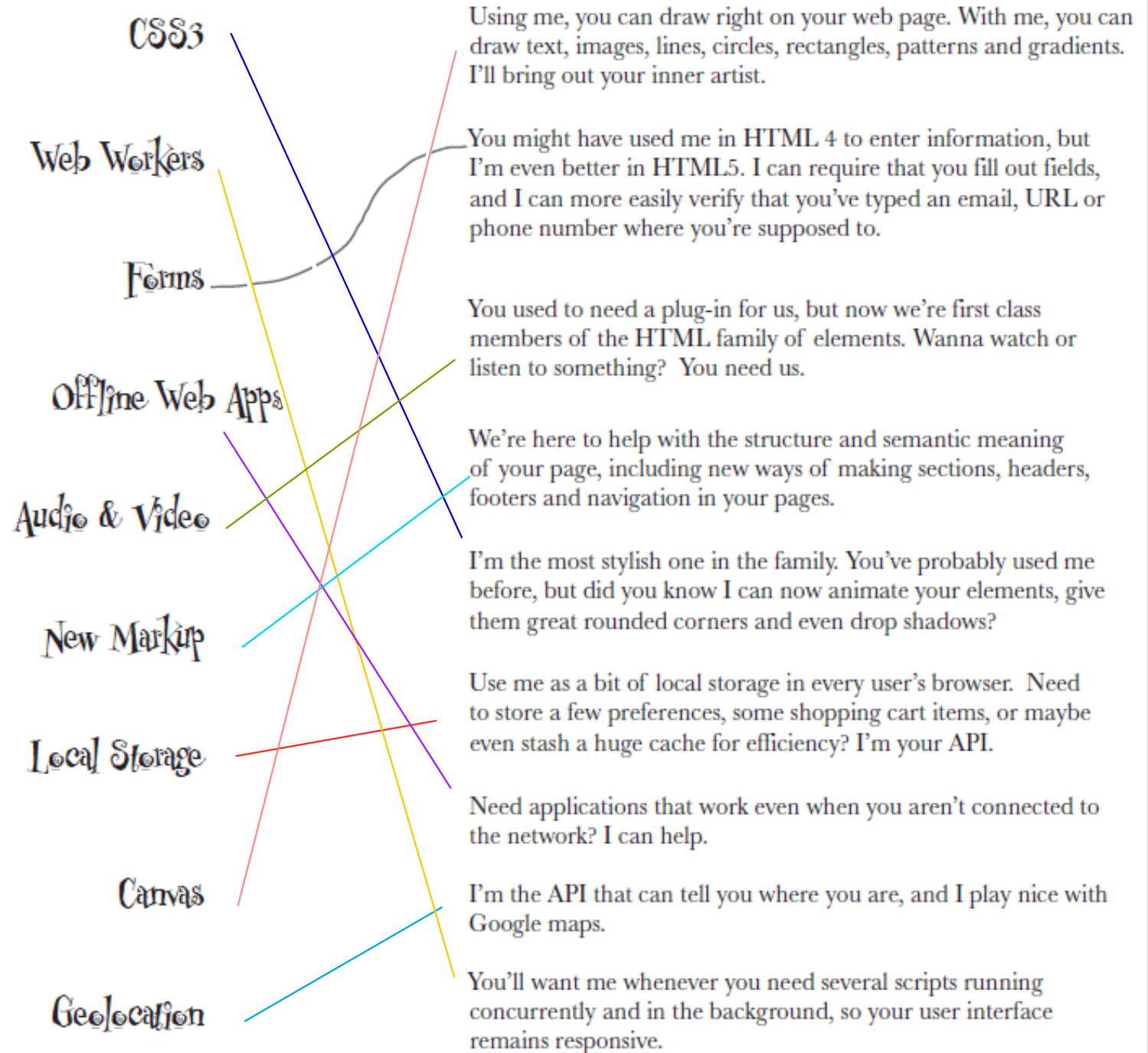- Relationship between elements are described in term from a family tree

Parent

Child

Grandchild

```
<html>
    <head>
        <title>Page's title</title>
    </head>
    <body>
        <h1>headline 1</h1>
        <p>Paragraph of text</p>
    </body>
</html>
```

HTML/XHTML

- Same main idea
- HTML is too relaxed
  - Hard to find a minor mistake
  - Ex:
    - \<h1>this is \<i>KMITL\</i>\</h1>
    - \<h1>this is \<i>KMITL\</h1>\</i>
- XHTML was then developed in 1998 by W3C to fix this issue
  - Strengthen rules
  - Version 2
    - too strict
    - forces the developer to change behavior
    - has no new desired features.
    - /Failure/

HTML5

- 3 key principles of HTML5
  - Don't break the web
    - Everything that was valid before HTML5 remains valid in HTML5
  - Pave the cowpaths
    - Standardizes the unofficial technics that is widely used
  - Be practical
    - Changes should have a practical purpose
    - Ex: If people are using the web to watch video, then support video in HTML standard
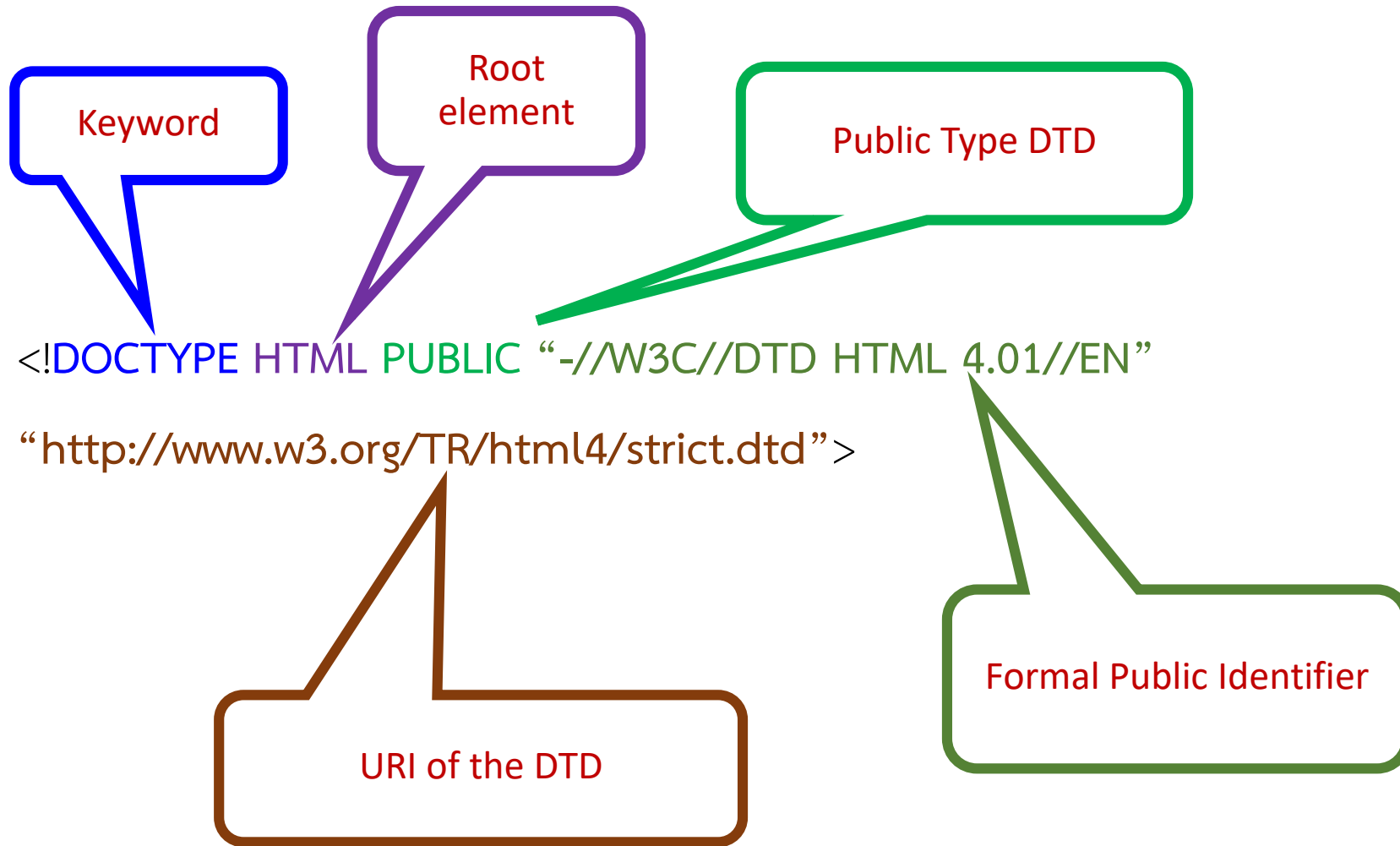
HTML5

CSS3

Web Workers

Forms

Offline Web Apps

Audio & Video

New Markup

Local Storage

Canvas

Geolocation

Using me, you can draw right on your web page. With me, you can draw text, images, lines, circles, rectangles, patterns and gradients. I'll bring out your inner artist.

You might have used me in HTML 4 to enter information, but I'm even better in HTML5. I can require that you fill out fields, and I can more easily verify that you've typed an email, URL or phone number where you're supposed to.

You used to need a plug-in for us, but now we're first class members of the HTML family of elements. Wanna watch or listen to something? You need us.

We're here to help with the structure and semantic meaning of your page, including new ways of making sections, headers, footers and navigation in your pages.

I'm the most stylish one in the family. You've probably used me before, but did you know I can now animate your elements, give them great rounded corners and even drop shadows?

Use me as a bit of local storage in every user's browser. Need to store a few preferences, some shopping cart items, or maybe even stash a huge cache for efficiency? I'm your API.

Need applications that work even when you aren't connected to the network? I can help.

I'm the API that can tell you where you are, and I play nice with Google maps.

You'll want me whenever you need several scripts running concurrently and in the background, so your user interface remains responsive.

HTML Documents structure

- A valid document contains the following components, in order:

1) The document type declaration

2) The document's html element

3) The head element inside of the html element

4) The title element and (optional) link, script, base, meta element inside of the head element

5) Within the html element after the head element must be body element

6) Inside of body element, there must be at least 1 block element

HTML Document Type

- Document type
  - Declare which type the document are created
  - Should be the very first thing in HTML document
  - Contains information about HTML's version using in the page
- In HTML 4.01
  - Using DTD file which defines the legal building block of HTML document
  - 3 types: Strict, Transitional, Frameset

```
<!DOCTYPE HTML PUBLIC "-//W3c//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
<!DOCTYPE HTML PUBLIC "-//W3c//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/loose.dtd">
<!DOCTYPE HTML PUBLIC "-//W3c//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/frameset.dtd">
```

HTML5 Document Type

Document structure

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01//EN"
    "http://www.w3.org/TR/html4/strict.dtd">
<html>
  <head>
    <title>Head First Lounge</title>
    <meta http-equiv="content-type" content="text/html; charset=UTF-8">
    <link type="text/css" rel="stylesheet" href="lounge.css">
    <script type="text/javascript" src="lounge.js"></script>
  </head>
  <body>
    <h1>Welcome to Head First Lounge</h1>
    <p>
      <img src="drinks.gif" alt="Drinks">
    </p>
    <p>
      Join us any evening for refreshing <a href="elixirs.html">elixirs</a>,
      conversation and maybe a game or two of Tap Tap Revolution.
      Wireless access is always provided;  BYOWS (Bring Your Own Web Server).
    </p>
  </body>
</html>
```

HTML 4.01

HTML 5

Document structure

```
<!doctype html>          ←——— The doctype
<html>
  <head>
    <title>Head First Lounge</title>

    <meta charset="utf-8">        ←——— the meta tag
    <link rel="stylesheet" href="lounge.css">    ←——— the link tag
    <script src="lounge.js"></script>     ←——— and the script tag
  </head>
  <body>
    <h1>Welcome to Head First Lounge</h1>
    <p>
      <img src="drinks.gif" alt="Drinks">
    </p>
    <p>
      Join us any evening for refreshing <a href="elixirs.html">elixirs</a>,
      conversation and maybe a game or two of Tap Tap Revolution.
      Wireless access is always provided;  BYOWS (Bring Your Own Web Server)
    </p>
  </body>
</html>
```

Good HTML5 practices

- Including the optional **<html>**, **<head>** and **<body>** elements
- Using **lowercase tags**
- Using **quotation marks** around attribute values

- Validate the html5: http://validator.w3.org

XHTML5

- If HTML5 is too loose for you, XHTML5 may be your solution.
- To use XHTML5
  - Add xhtml namespace to the <html>
  - Ex:
  <html xmlns="http://www.w3.org/1999/xhtml">

Structuring Documents for the web
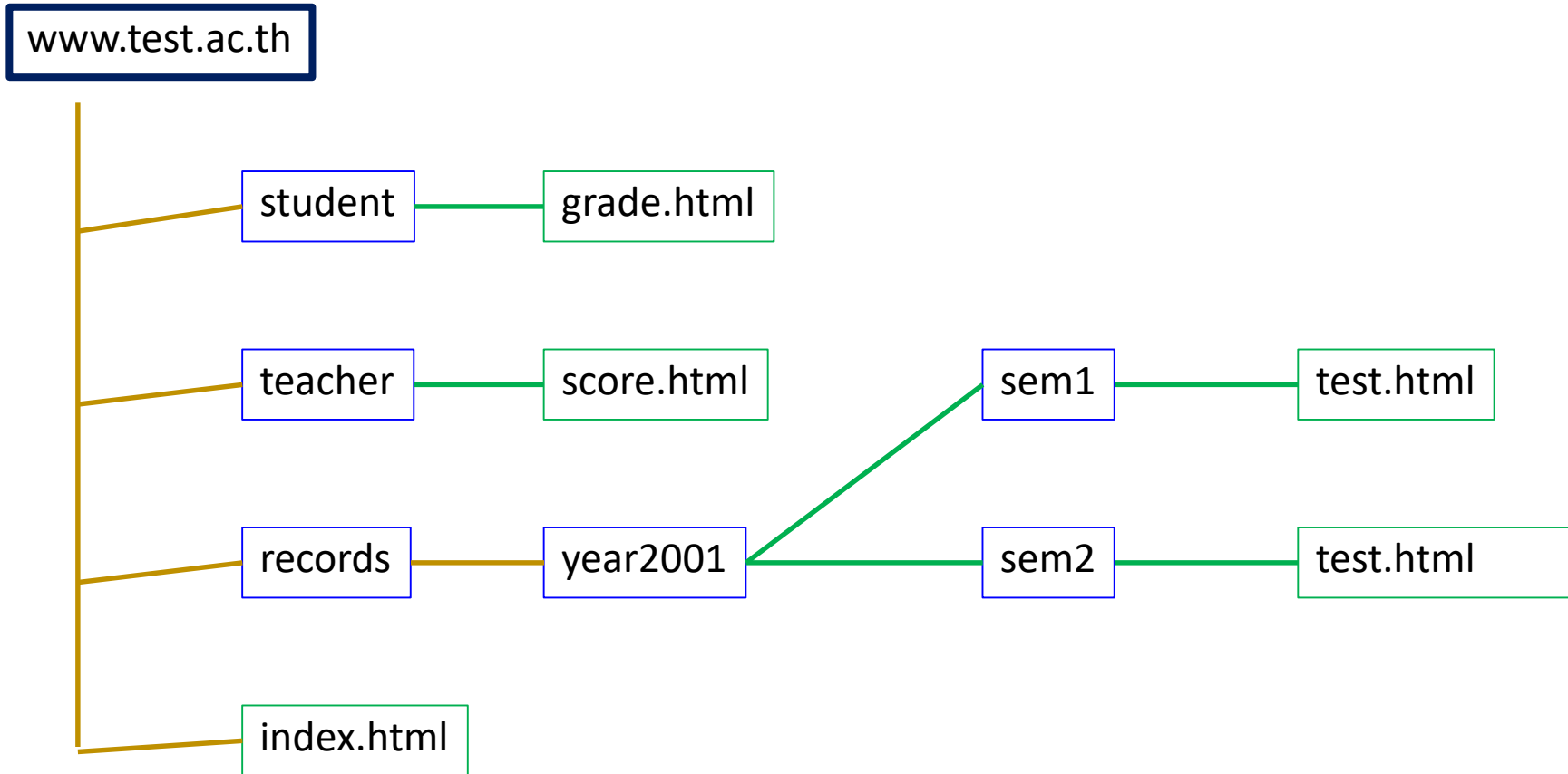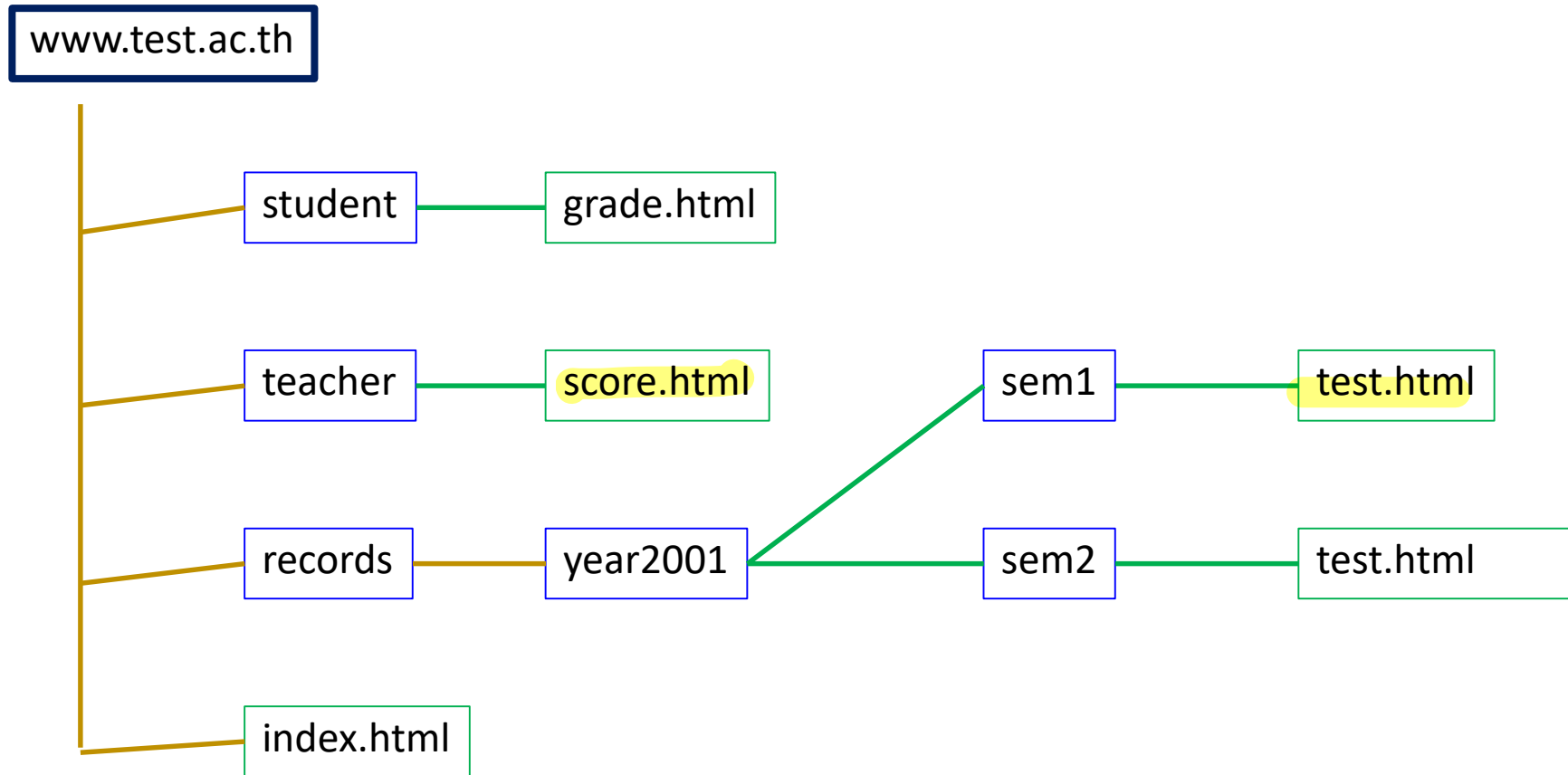
- Heading
  - 6 levels from <h1> to <h6>
- Section
  - Paragraph <p>
  - Preformatted sections <pre>
  - Line breaks
  - Addresses <address>
- Phrase elements
  - <em>, <strong>, etc.
- Presentation
  - <b>, <i>, <u>, <sup>, <sub>, etc.

- Lists
  - &
  - &
- Editing
  - <ins> and <del>
- Structure & Grouping
  - <article>
  - <header>, <footer> and <div>
  - <span>
- Link
  - <a>
- Form
  <input>

Experiments

- https://www.w3schools.com/
- Click "Try it Yourself"

Link and Navigation Tags

- Link to other web page

    Click here

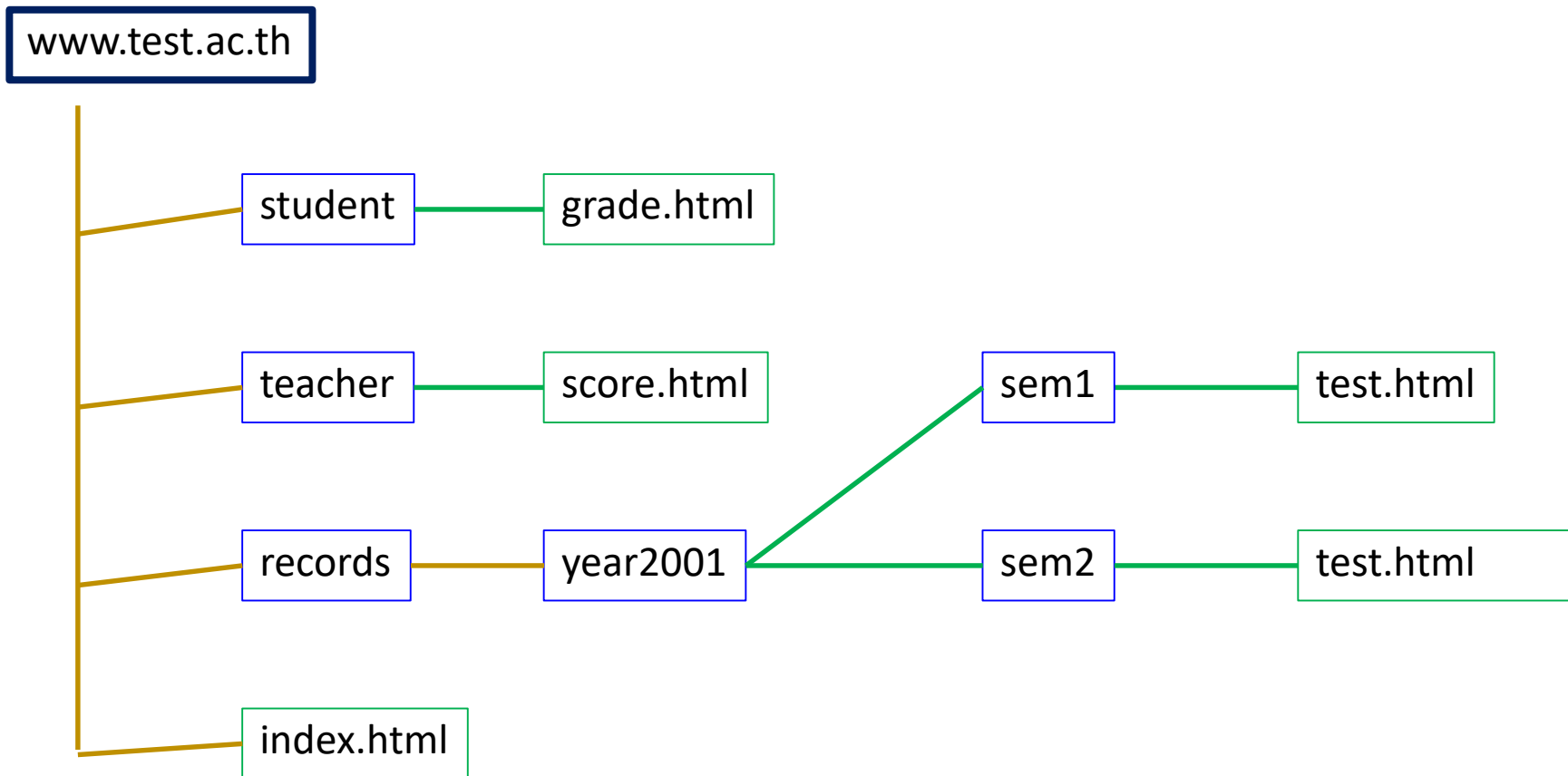- Link to E-mail Address

    mail to Admin

- Link to URL types

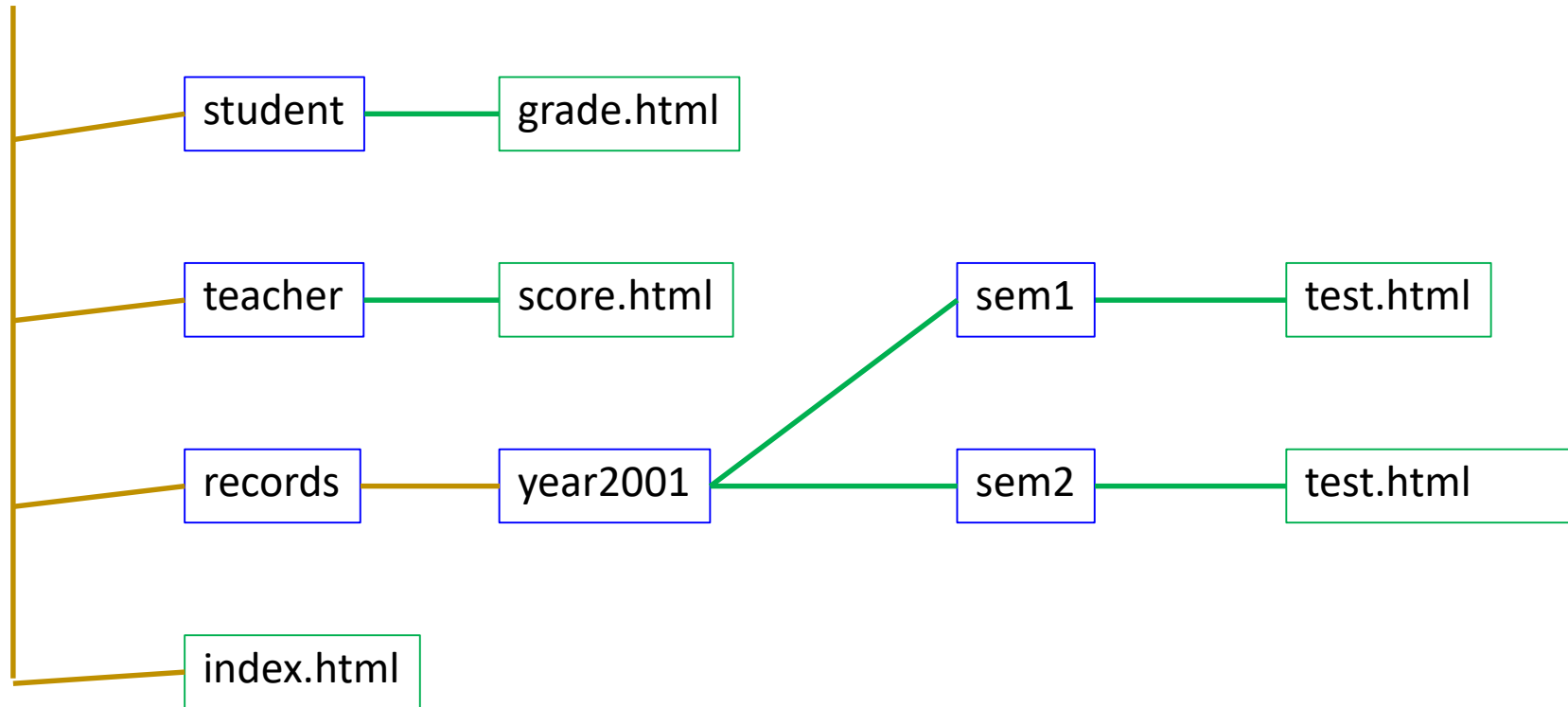   - Absolute URL

    - Relative URL

Absolute URL

- Location: http://www.test.ac.th or http://www.test.ac.th/index.html

- http://www.test.ac.th/student/grade.html

- http://www.test.ac.th/records/year2001/sem1/test.html

www.test.ac.th

- student — grade.html
- teacher — score.html
- records — year2001 — sem1 — test.html
                        — sem2 — test.html
- index.html

Grade

Score

2001/1

Relative URL

- index.html link to grade.html

grade.html

- test.html in sem1 link to score.html

- link to score

- link to score

Destination Anchor

- Destination anchor

  TOP

- Link to destination anchor

  TOP

Other Attributes of <a>

- Charset

go to test

- hreflang

go to test

- Target

go to test

- Tabindex

go to test

Image, Audio, Video

- Adding image to the page

  `<img src="image.png" alt="logo">`

- Specify the size of image

  `<img src="image.png" alt="logo" height="20" width="30">`

- Align

  `<img src="image.png" alt="logo" align="left">`

- Border

  `<img src="image.png" alt="logo" border="5">`

- Space

  `<img src="image.png" alt="logo" hspace="15" vspace="15">`

No Align

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue.

Align Left

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue.

Align Right

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut risus tellus, hendrerit id, sagittis sed, lobortis eget, augue.

- Image as links

<code>

   <img src="image.png" alt="logo">

</code>

- Image Maps

Form

- <form> element carry at least 2 attributes

  - action = usually specifies program that will receive information

  - method = specifies HTTP post or HTTP get to be used to carry information to the server

- Others attributes:

  - id = uniquely identify <form> element within a page, value must be unique to the document

  - name (deprecated) = the same as id

  - onsubmit = fire submit event, uses in conjunction with script, its value is a script

- onreset = fire clear form event, its value is a script
- enctype = uses with HTTP post method to tell browser which kind of encoding to be used
  - application/x-www-form-urlencoded (default) = general data encoding
  - multipart/form-data = data encoding in case of uploading image or file
  - accept-charset = specifies character encoding used
  - target = specifies which frame the form's result will be displayed

Form Controls

- Text input

- Buttons

- Checkboxes and radio buttons

- Select boxes

- File select boxes

- Hidden control

Form

```html
<form action="http://www.example.org/search.aspx" method="get">

< h3 > Search the site < /h3 >

< input type="text" name="txtSearchItem"  >

< input type="submit" value="Search"  >

< /form >
```


A simple search form - Mozilla Firefox

File   Edit   View   History   Bookmarks   Tools   Help

Search the site

[   ] [Search]

```
< form action="http://www.example.org/feedback.aspx" method="post" >

Please tell us what you think of the site and then click submit: < br >

< textarea name="txtFeedback" rows="20" cols="50" >

Enter your feedback here.   < /textarea > < br / >

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

< /form >
```
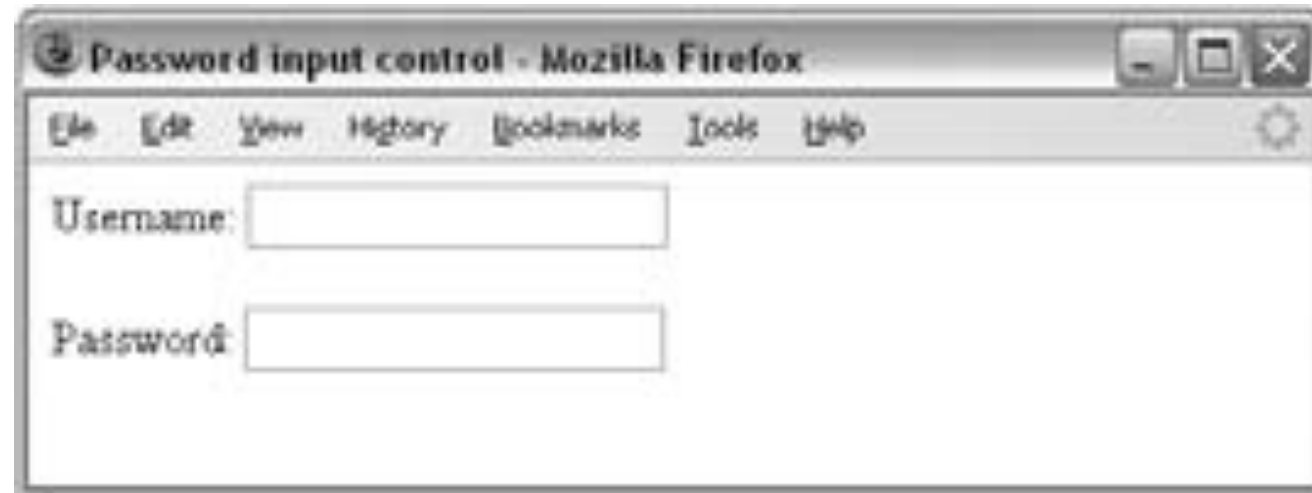
```
< form action="http://www.example.com/login.aspx" method="post" >
Username:
< input type="text" name="txtUsername" value="" size="20" maxlength="20"  >
< br  >
Password:
< input type="password" name="pwdPassword" value="" size="20" maxlength="20"  >
< input type="submit" value="Submit" >
< /form >
```

```html
< input type="submit" name="btnVoteRed" value="Vote for reds"  >
< input type="submit" name="btnVoteBlue" value="Vote for blues"  >
< br > < br >
< input type="reset" value="Clear form" > < br > < br >
< input type="button" value="calculate" onclick="calculate()" >
```

< input type="image" src="submit.jpg" alt="Submit" name="btnImage" >

< button type="submit" > Submit < /button >

< br > < br >

< button type="reset" > Clear this form , I want to start again </button>

< br > < br >

< button type="button" > < img src="submit.gif" alt="submit" > < /button >

```html
<form action="http://www.example.com/cv.aspx" method="get" name="frmCV">
Which of the following skills do you possess? Select all that apply.
< input type="checkbox" name="chkSkills" value="xhtml"  > XHTML < br >
< input type="checkbox" name="chkSkills" value="CSS" > CSS < br >
< input type="checkbox" name="chkSkills" value="JavaScript" > JavaScript < br >
< input type="checkbox" name="chkSkills" value="aspnet" > ASP.Net < br >
< input type="checkbox" name="chkSkills" value="php" > PHP
< /form >
```

< input type="checkbox" name="chkAcceptTerms" checked="checked" >

In the absence of a value attribute, the value is on

```html
<form action="http://www.ex.com/flights.aspx" name="frmFlightBooking" method="get">
Please select which class of travel you wish to fly: < br >
< input type="radio" name="radClass" value="First" > First class < br >
< input type="radio" name="radClass" value="Business" > Business class < br >
< input type="radio" name="radClass" value="Economy" > Economy class < br >
< /form >
```


Radio buttons - Mozilla Firefox

File   Edit   View   History   Bookmarks   Tools   Help

Please select which class of travel you wish to fly:
○ First class
○ Business class
○ Economy class

```html
< select name="selColor" >
< option selected="selected" value="" > Select color < /option >
< option value="red" > Red < /option >
< option value="green" > Green < /option >
< option value="blue" > Blue < /option >
< /select >
```
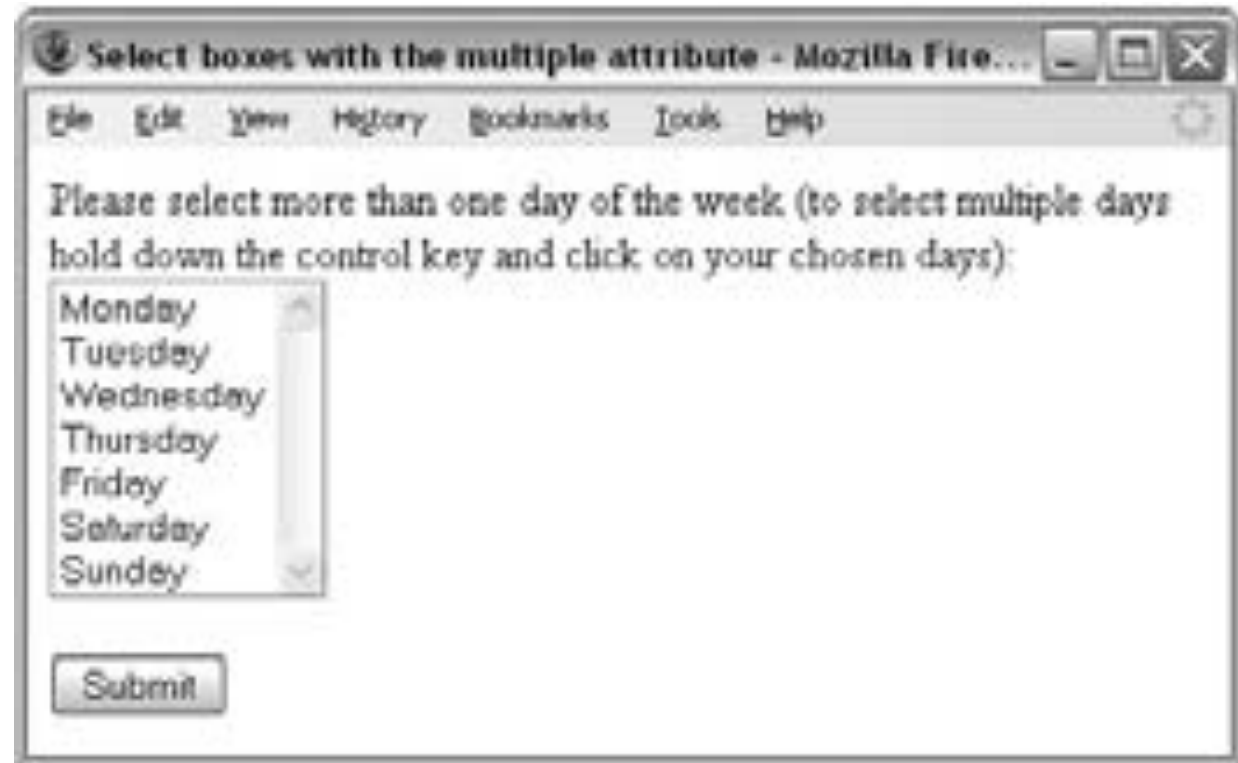
```html
< select size="4" name="selDay" >

< option value="Mon" > Monday < /option >

< option value="Tue" > Tuesday < /option >

< option value="Wed" > Wednesday < /option >

< option value="Thu" > Thursday < /option >

< option value="Fri" > Friday < /option >

< option value="Sat" > Saturday < /option >

< option value="Sun" > Sunday < /option >

< /select >
```

```
< select name="selDays" multiple="multiple" >

< option value="Mon" > Monday < /option >

< option value="Tue" > Tuesday < /option >

< option value="Wed" > Wednesday < /option >

< option value="Thu" > Thursday < /option >

< option value="Fri" > Friday < /option >

< option value="Sat" > Saturday < /option >

< option value="Sun" > Sunday < /option >

< /select >
```
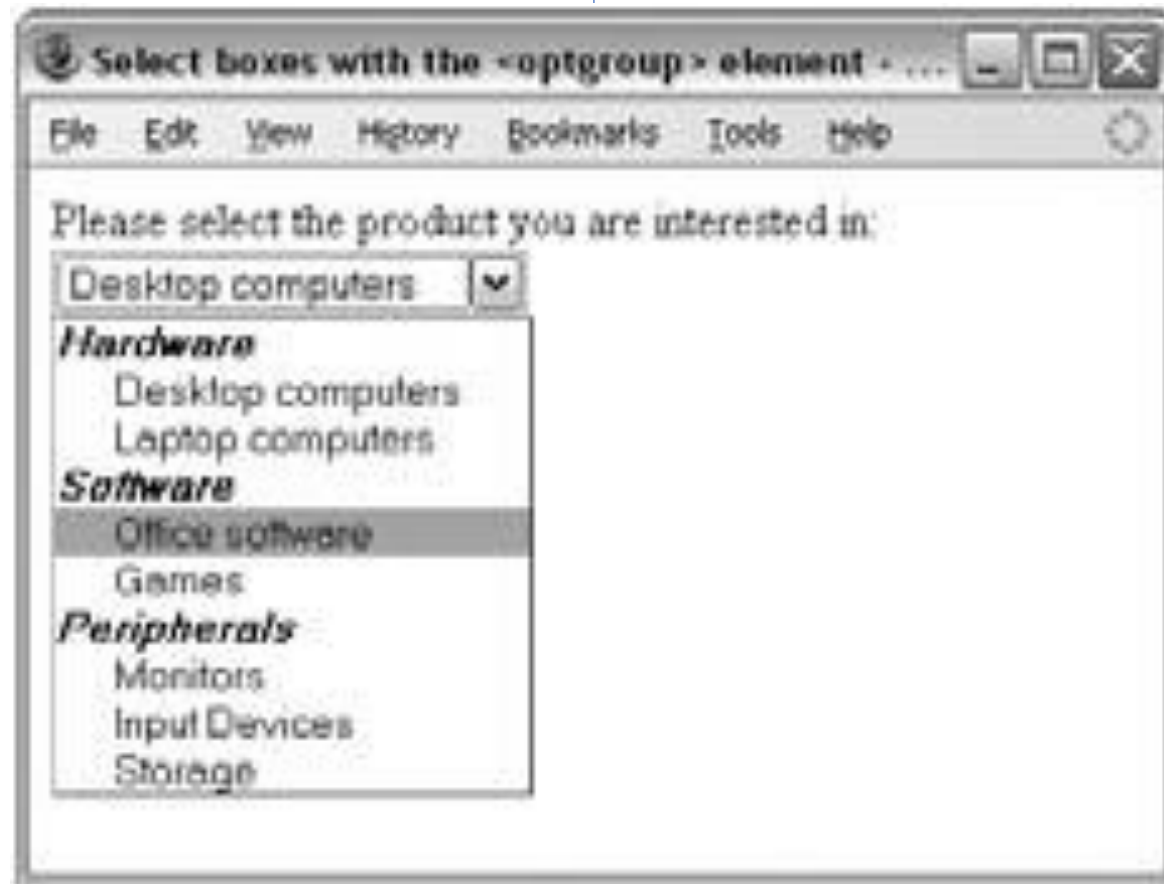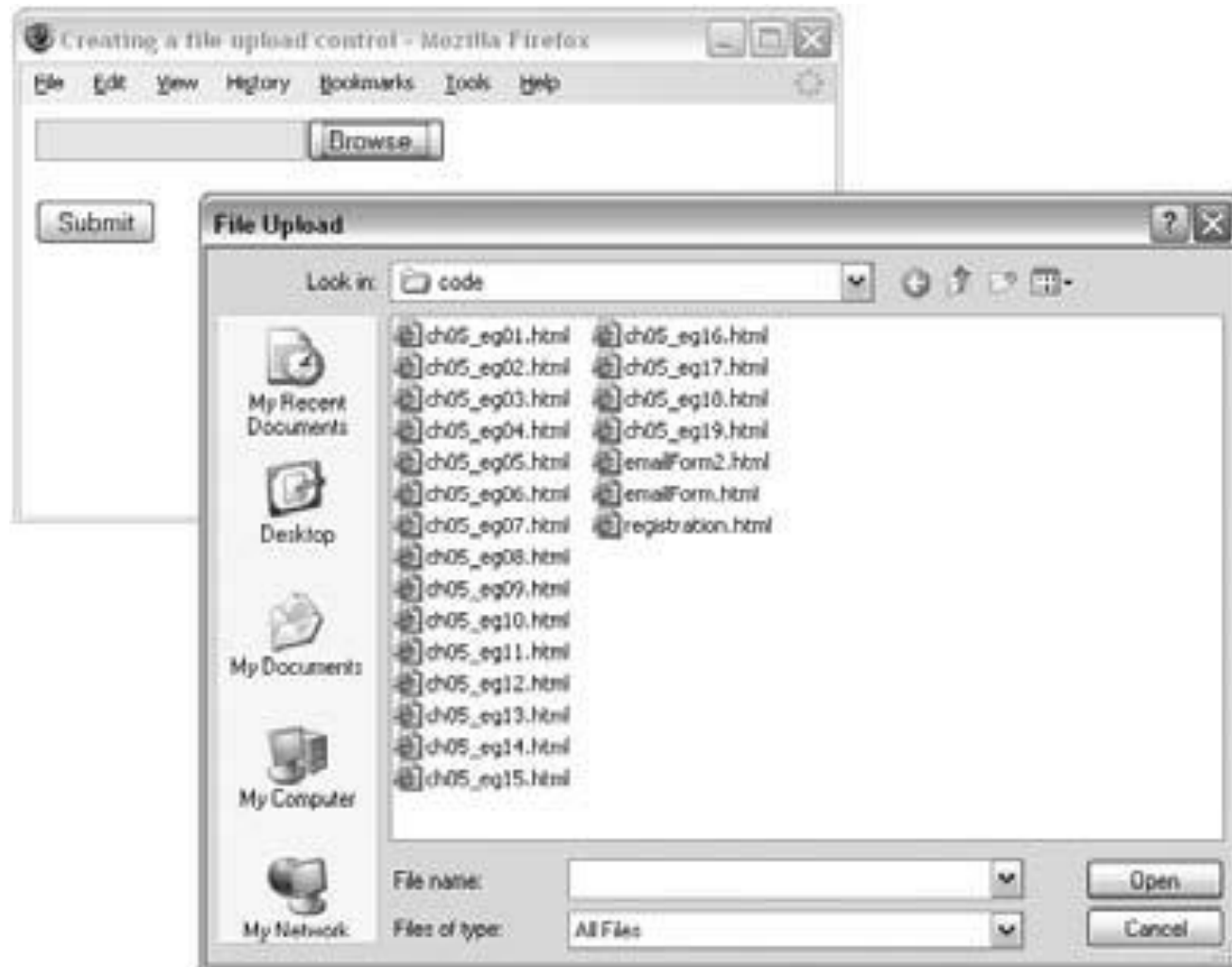

Select boxes with the multiple attribute - Mozilla Fire...

File Edit View History Bookmarks Tools Help

Please select more than one day of the week (to select multiple days hold down the control key and click on your chosen days):

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

Submit

```
< select name="selInformation" >
< optgroup label="Hardware" >
< option value="Desktop" > Desktop computers < /option >
< option value="Laptop" > Laptop computers < /option >
< /optgroup >
< optgroup label="Software" >
< option value="OfficeSoftware" > Office software < /option >
< option value="Games" > Games < /option >
< /optgroup >

< optgroup label="Peripherals" >
< option value="Monitors" > Monitors < /option >
< option value="InpD" > Input Devices < /option >
< option value="Storage" > Storage < /option >
< /optgroup >
```

```
< form action="http://www.example.com/imageUpload.aspx" method="post"
name="fromImageUpload" enctype="multipart/form-data" >
< input type="file" name="fileUpload" accept="image/*" >
< br > < br > < input type="submit" value="Submit" >
< /form >
```

```
< form action="http://www.example.com/vote.aspx" method="get" name="fromVote" >
< input type="hidden" name="hidPageSentFrom" value="home page" >
< input type="submit" value="Click if this is your favorite page of our site." >
< /form >
```


A hidden control - view source to see its content ...

File   Edit   View   History   Bookmarks   Tools   Help

To see the contents of the hidden form control go to the View menu and choose the option to view the source for this page.

Click if this is your favorite page of our site