IT350 Web and Internet Programming

Set 17: HTTPS and Accessibility

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HTTPS: HTTP over SSL

HTTP	FTP	…
	SSL	
	TCP	
	IP	
	Various	

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Encryption

- Encode / decode the data
- Need:
  - algorithm
  - key
- Symmetric encryption
- Asymmetric encryption
  - Interesting property: you can switch encryption and decryption key and get the same results

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SSL Protocol Highlights

- Browser connects to SSL-enabled server
- Computers agree on encryption method
- Server sends its digital certificate (contains the public key)
- Browser and server generate session key
- Further communications are encrypted using the session key

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HTTP over SSL: How to use it?

- Example: need to submit login information securely; script to execute is login.pl
- Secure invocation:

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Digital Certificates

- Bob got a public key from Amazon. Is it really Amazon's key?

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Accessibility Lecture Goal

- To be able to describe sources of accessibility guidelines and standards, and the impact of these guidelines on designing computer-based applications.

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Web Accessibility

- What is Web Accessibility?

- Why should I implement it?

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Legal

Act	Purpose
Americans with Disabilities Act of 1990	The ADA prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation and telecommunications.
Telecommunications Act of 1996	The Telecommunications Act of 1996 contains two amendments to Section 255 and Section 251(a)(2) of the Communications Act of 1934. These amendments require that communication devices, such as cell phones, telephones and pagers, be accessible to individuals with disabilities.
Individuals with Disabilities Education Act of 1997	Educational materials in schools must be made accessible to children with disabilities.
Rehabilitation Act of 1973	Section 504 of the Rehabilitation Act states that college-sponsored activities receiving federal funding cannot discriminate against individuals with disabilities. Section 508 was strengthened in 1998 to require the federal procurement of accessible electronic and information technology. The Electronic and Information Technology Accessibility Standards provide the federal technical standards for accessible Web design. Section 508 mandates that all government institutions receiving federal funding and all businesses that sell services to the government must design their Web sites in accordance with these stipulations.
Fig. 29.1 Acts designed to protect access to the Internet for people with disabilities.	

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What to do? 2 Possible Benchmarks

- Web Content Accessibility Guidelines (WCAG)
  - Priority-one checkpoints
    - Goals that must be met to ensure accessibility
  - Priority-two checkpoints
    - Not essential, highly recommended
  - Priority-three checkpoints
    - Slightly improve accessibility
- "Section 508"

  (a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

  (j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

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Guidelines: Images and Structure

- Images
  - `alt` attribute
  - `longdesc` attribute
- Structure
  - Use headers for _____ , not _____
  - Use tables for _____ , not _____
- Titles

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What's wrong with this table?

```
<p>Price of Fruit</p>

<table border = "1" width = "50%">

   <tr>
      <td>Fruit</td>
      <td>Price</td>
   </tr>

   <tr>
      <td>Apple</td>
      <td>$0.25</td>
   </tr>

   <tr>
      <td>Pineapple</td>
      <td>$2.00</td>
   </tr>

</table>
```

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What's right with this table?

```
<table width = "50%" border = "1"
  summary = "This table contains information about
  the price of fruit. The table lists the price of
  apples, oranges, bananas and pineapples.">

  <caption><strong>Price of Fruit</strong></caption>

  <tr>
     <th id = "fruit">Fruit</th>
     <th id = "price">Price</th>
  </tr>

  <tr>
     <td headers = "fruit">Apple</td>
     <td headers = "price">$0.25</td>
  </tr>

  <tr>
     <td headers = "fruit">Pineapple</td>
     <td headers = "price">$2.00</td>
  </tr>
</table>
```

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Resources

- Web Accessibility Initiative
  - http://www.w3.org/WAI/
- http://www.usna.edu/Masters/Section508/
- http://webaim.org/standards/508/checklist
- http://www.icdri.org/section508/section_508_resource_page.htm
- http://www.access-board.gov/sec508/508standards.pdf

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