CSCI 3308 – Software Development Methods and Tools

University of Colorado Boulder

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Boulder

Reminders

Topics

- JavaScript

External JavaScript

- Why?
  - Same JavaScript on several pages in a web site
  - Avoid writing the same script repeatedly.
- Include the external script file exactly where you would have written the script.
- Save the script file with a .js extension, and then refer to it using the src attribute in the <script> tag.
  - <script src=”URL"></script>
- URL can be:
  - The URL of the external script file.
  - Possible values:
    - ***An absolute URL - points to another web site (like src="http://www.example.com/example.js")***
    - ***A relative URL - points to a file within a web site (like src="/scripts/example.js")***

Head vs Body

- <script> can be included in both <head> and <body>
- If you're including JavaScript libraries from external resources, consider including them right before </body> within you web page
- Why you should you consider doing so?
  - Prevent slow loading of the remaining resources
  - Your DOM will be completely loaded when your js scripts are loaded
- Potential problems in doing so?
  - External library (like JQuery) dependent page building components will be delayed

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Example 4

- Passing function arguments

Event Handler

- Common HTML events

Event	Description
onchange	An HTML element has been changed
onclick	The user clicks an HTML element
onmouseover	The user moves the mouse over an HTML element
onmouseout	The user moves the mouse away from an HTML element
onkeydown	The user pushes a keyboard key
onload	The browser has finished loading the page

EventListener

- JavaScript addEventListener() function allows you to register an event with a function. When an event is fired, a function will be called.
  - e.g. user pushes a key is an event
- Can remove the event using removeEventListener()
- Example 5

Event Loop

- JavaScript is an event-driven language and its code runs single-threaded

Callback Functions

- A callback function is a function passed into another function as an argument, which is then invoked inside the outer function to complete a routine or action.
- A function that accepts other functions as arguments is called a **higher-order function**, which contains the logic for *when* the callback function gets executed. It’s the combination of these two that allow us to extend our functionality.
- Example 6

Event Loop Example

- https://blog.sessionstack.com/how-javascript-works-event-loop-and-the-rise-of-async-programming-5-ways-to-better-coding-with-2f077c4438b5

Questions