Lesson one “HTML”

1. **What is a TCP port?**
   1. **Transfer Control protocol, it’s guaranteed the delivery of messages on top of IP**
2. **What is multiplexing (regarding tcp ports)?**
   1. **Multiple applications using the same IP number by assigning different port number to each app.**
3. **What is the difference between a browser and a web server? How do they work together?**
   1. **Web Server: is a software that response to a web request ex: IIS, Apache**
   2. **Browser” is software on the client device that displays the web documents coming from web server.**
4. **What is DNS?**
   1. **Servers that convert the written url to the corresponding IP address**
5. **What are the key parts of a URL?**
   1. **Protocol**
   2. **Host name “Domain name”**
   3. **Path**
   4. **Extras “anchor, port, query string”**
6. **How is DNS involved in a URL?**
   1. **When the user enters the url, the browser will ask the DNS server to give him the IP address of that Host.**
7. **What are anchor, ports, and query strings in URLs?**
   1. **Anchor: jumps to a given section of a web page**
   2. **Port: defines which port the server will use to receive the web request other than the default port “80”.**
   3. **QueryString: a set of parameters that are passed to a web application in theurl using the get method.**
8. **What are the different kinds of HTTP messages?**
   1. **Get: Requests a specific file or resource from the server**
   2. **Post: submit a form to the server**
   3. **Put: upload a resource to the server**
   4. **Head: Requests information about a file from the server**
9. **How is HTTP related to HTML?**
   1. **HTML is a language that describes the structure of the web page that comes as a response from the server by using HTTP.**
10. **What are HTTP status codes?**
    1. **200 -> ok**
    2. **301 – 303 -> page has removed**
    3. **403 -> forbidden access**
    4. **404 -> file not found**
    5. **500 -> server internal error**
11. **Write the most basic HTML5 web page**

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta charset=”UTF-8”/>**

**</head>**

**<body>**

**</body>**

**</html>**

1. **What is the difference between a relative and absolute url?**
   1. **Relative URL, is the location of any resource starting from the calling resource location**
   2. **Absolute URL, is location of any resource starting from the root of my website**
2. **What does it mean if a URL starts with a / ? with a file name? with a .. ?**
   1. **/with a file name: means find this file on the root location of my web site**
   2. **/ with .. before it: means go one level up from the current location**
3. **What are the difference between block level and in-line elements?**
   1. **Block-level element starts a new line, can have another block-level element or inline element inside it, and occupies the whole width of its parent “they arranged on top of each other”.**
   2. **Inline-element must be inside block-level element, and it occupies only the width that is needed for its content “The arranged next to each other”**
4. **Write HTML for an unordered list, ordered list, table**

Lesson two “CSS”

1. **What is the principle of keeping content separate from presentation, and what are its advantages?**
   1. **Unobtrusive, advantages is so easy to change the whole appearance by swapping .css file**
2. What are the 3 ways of adding style information to an HTML page?
   1. **Inline**
   2. **Embeded**
   3. **External file**
3. What is the format of a CSS style rule? Give an example.
   1. **P{ color: red;}**
4. How do you set a font type?
   1. **By using the font-family attribute.**
5. What are CSS generic fonts and how are they recommended to be used?
   1. **Serif – sans-serif- cursive – monospace - fantasy**
6. What is the difference between px, pt, and em?
   1. **Px: is the number of pixels**
   2. **Pt: number of points point is 1/72 of an inch on screen**
   3. **em: relative unit (2em means 2 times the size of the current font)**
7. What is the text-decoration property?
   1. **Decorate the text with one of these valus “underline, overline, line-through, blink, none”**
8. When should you use an <img> versus a background-image?
   1. **Img: html tag used to place an image on the page, we can’t add text on top of it**
   2. **Background: css property used to change the background of an element, and we can write on top of it.**
9. Give an example of a property that is not inherited and why it is not inherited.
   1. **Link’s color, src, href because they are so specific for certain elements img, a respectively.**
10. What does 'cascading' mean in CSS?
    1. **It means the css rules are stacked on top of each other, and the later ones overwrite the earlier ones if they have the same specificity.**
11. Why are classes higher scoring than HTML elements and IDs higher than classes?
    1. **Because classes are more specific than HTML elements, and IDs are the most specific one of all of them “target only one element”**
12. What are the HTML class and id attributes?
    1. **Class: It an attribute that is used to assign a css class for that html element**
    2. **ID: it’s an identifier for this html element and it must be unique through the page.**
13. Create a jsfiddle that makes hyperlinks yellow after they are visited.
    1. **a:visited{ color: yellow;}**

Lesson three ”Layout”

1. What is the difference between div and span? How does a browser normally align divs and spans?
2. How are divs related to the HTML5 page section tags?
   1. **They’re almost the same but the HTML5 tags have a semantic meaning for them.**
   2. **Header, Footer, Nav, Section, Article**
3. What are the two CSS context selector syntaxes? Give examples of each.
   1. **Div p : get all the p inside div**
   2. **Div > p: get all p that are direct children of div**
4. What is an id selector?
   1. **Select an element by its id html attribute by #idname**
5. What is a class selector?
   1. **Select an element that has a specific class “div.sunny”**
6. What is a type selector?
   1. **p**
7. Give an example of grouping type selectors.
   1. **div, p, li**
8. Give an example of a type selector with a class selector.
   1. **p.sunny, div.main**
9. Give an example of a selector that finds all h1 elements that have a class of 'important'
   1. **h1.important**
10. What is the difference of padding and margin in the box model?
    1. **Padding: is the space between the content and its border**
    2. **Margin: is the space between the element and the neighbor elements.**
11. What do the standard width and height measure in the box model?
    1. **Measures the content width.**
12. What is margin collapse?
    1. **It’s when two elements have vertical margins and they touch each other the browser will calculate the bigger margin of both of them.**
13. How can you center a block element using auto margin?
    1. **margin: 0 auto;**
14. Which size and margin properties are used by the browser for inline boxes?
    1. **Size: width, and the height will be the content width and height, and the browser will ignore the size properties for the inline elements “height, width, max-height, max-width”.**
    2. **Margin: the browser will ignore the top and bottom margins for inline elements**
15. What does the text-align property do for inline and block elements?
    1. **Block level elements: will align the content of this element.**
    2. **Inline elements: will ignore it.**
16. What does the vertical-align property do?
    1. **Specifies where an inline element should be aligned vertically, with respect to other content on the same line within its block element's box**
17. What are the values of the float property and how do they affect the alignment of elements on the page?
    1. **right, left, none – it’ll align the element to the respected value and remove it from the normal document flow.**
18. How does the clear property interact with float?
    1. **move this element below any prior floating elements in the document**
19. How does the overflow property interact with float?
    1. **If the floated element content is larger than its width, overflow: hidden will allow us to see the whole content.**
20. What does the column-count property do?
    1. **Determine the number of the columns**
21. Explain the 4 position property values and their differences.
    1. **Relative:**
    2. **Absolute:**
    3. **Static:**
    4. **Fixed:**
22. When should you use alignment versus float versus position for laying out elements on a page?
    1. **Position: is used when we want to place an element in a specific position according to viewport “Fixed”, nearest element that has non-static position value “Absolute”, or relative to its original static position “relative”.**
    2. **Float: used to align both inline element and block-level elements to the left or to the right and takes the floated element out of the normal document flow.**
    3. **Text-alignment: is used to horizontally align the content of the block level element not the element itself.**
23. What does display: inline do? How is it different from inline-block?
    1. **Inline: will ignore the size properties “width and height”, and the next element will be next to it.**
    2. **Inline-block: will consider the size properties and will allow other elements to be placed next to it.**

Lesson four “Form”

1. What is a form input parameter?
2. What is the difference between get and post methods?
   1. **Get: has a header only no body, the parameters are sent in the header “URL”, and it’s used mainly to request data from s server.**
   2. **Post: has a header and a body, the parameters are sent in the body, and it’s used mainly to submit data to the server.**
3. What does the action attribute of form specify?
4. What does the method attribute of form specify?
5. Why is the name attribute important on an input element?
6. What does the checked attribute do on a checkbox element?
7. What does the multiple attribute do on a select element?
8. What does the browser do when an input element of type submit is clicked?
9. What happens if the submit button is not inside of a form?
10. What is the meaning of the following CSS selector pattern? element[attribute="value"]
11. What does the browser do with the pattern attribute in an input element?
12. The regular expression 'abc' is supposed to match 'abcdef', but will do so in the pattern attribute of a text element. Why?
13. Write a regular expression to check if for a pattern containing 1 or more word characters followed by '@' followed by 1 or more word characters.
    1. **.+@.+**

Lesson five “JS intro”

1. What are the 8 JavaScript types?
   * **Object, Function, Boolean, Number, Array, String, null, undefined**
2. What is the difference of 'var' and 'let'?
   * **Both are used to declare variable. Variables that are declared by var will be hoisted, but variables declared with let will have a block scope.**
3. What is the difference of == and ===? Which should be used and why?
   * **== will check the value and makes any necessary conversions for that**
   * **=== strictly equal will check the type and the value “makes no conversions”**
4. What is 2 + "2"? What is "2" + 2? 2 + 2?
   * **22 – 22 - 4**
5. How can you convert from a string to an int or float?
   * **parseInt, parseFloat**
6. What values are falsey? What values are truthy?
   * **0,0.0, null, undefined, false, NaN, “”**
   * **Anything else is truthy**
7. What is the value of !!0 and why?
   * **false**
8. What is the difference of null and undefined?
   * **Null: declared with null value**
   * **Undefined: not declared**
9. Give 2 ways to initialize an array with 'a' 'b' 'c' .
   * **Var arr = [‘a’, ‘b’, ‘c’]**
   * **var arr = new Array("a","b","c");**
10. What operations will operate an array like a stack? like a queue?
    * **Push(), pop(), shift(), unshift()**
11. What is the difference of a function declaration and function expression?
    * **Function declaration is hoister function name(){ alert (“hello”);}**
    * **Function expression is not hoisted var func = function(){alert (“hello”);}**
12. What is the DOM? How does it relate to HTML? How does it relate to JavaScript?
    * **DOM: Document Object Model. It’s the API for manipulating HTML elements. DOM Objects are JS objects.**
13. What does document.getElementById("abc") do?
    * **Will return a DOM object that has id property = abc**

Lesson six “JavaScript Programming Environment”

* 1. what are the 6 global objects available to every JavaScript program (in a browser)
     1. **Window, document, location, navigator, screen, history**
  2. Which one holds the other 5 as properties
     1. **window object**
  3. How is document related to the DOM?
     1. **Document is one of the DOM global objects**
  4. Where are event handlers attached with unobtrusive JavaScript?
     1. **In the js external file, inside window.onload().**
  5. Give an example of a problem that could arise from obtrusive JavaScript.
     1. **When we attach an event handler to any html element, and we place out js file in the header. At this point in time, the browser has not yet read my page's body none of the DOM objects for tags on the page have been created yet**
  6. When does JavaScript code run?
     1. **Immediately after reading the js file.**
  7. What will happen if you call a function to attach an event handler in the head of the page?
     1. **Error message element is undefined “element here is the one that has event handler”.**
  8. When does the window.onload event run?
     1. **After the page is loaded**
  9. is window.onload a property or a method or both?
     1. **both**
  10. what is the difference of:
      1. okButton.onclick = okayClick();
         1. **assign the returning value of this function to click event and excute this function”**
      2. okButton.onclick = okayClick;
         1. **assign this function to the event click “not excuting it”**
  11. innerHTML is a property of what kind of element? What does it contain as its value?
      1. **The innerHTML property sets or returns the HTML content (inner HTML) of an element.**
  12. What is innerHTML hacking and why is it bad style?
      1. **When we insert element using innerHTML property, it’s bad because it’s error-prone because we’ve to keep track of all the single and double quote, it’s not part of DOM standards, and we’ll have issues involving DOM rebuilding tree.**
  13. Good style allows what to be assigned to innerHTML?
      1. **Insert plain text only.**
  14. What is the style property for a DOM element? Is it an object? What does it have for properties?
      1. **Allow us to set any CSS style property for an element, yes it’s an object, any css property can be appended to Style object and specify a value for it.**
  15. What is unobtrusive styling with respect to JavaScript code?
      1. **It means that we should write our js code in a separate file, and has as little js code inside html as possible.**
  16. What is the difference of setTimeout and setInterval?
      1. **setTimeou will excute a function one time after a certain amount of time.**
      2. **setInterval will excute a function every certain amount of time.**
  17. What do they return?
      1. **A secret identifier “number” to present that timer, and we use it to stop timer by clearInterval(intervalID).**
  18. What is strict mode?
      1. **shows an error if you try to assign to an undeclared variable**
      2. **stops you from overwriting key JS system libraries**
      3. **forbids some unsafe or error-prone language features**