



i>Clicker questions:

1.

```
var x = [4,6,8,10];  
print (x[2]);
```

What is printed to the screen?

Answer– 8

Explanation: Because the indices start from 0. Hence, $x[0] = 4$ and $x[2] = 8$

2.

```
var x = [4,6,8,10];
```

```
{  
    print (x[i]);  
}
```

Fill in the blank with the correct option to print every element of the array.

Answer- `for (var i=0; i<x.length; i++)`

Explanation : The option A) with `while(i < x.length)` cannot be used because – (i) the variable `i` has not been defined and initialized to 0 and (ii) there is no increment statement for `i` within loop block to go through all the elements. The block may behave in an unpredictable fashion, it might go in an infinite loop or do nothing.

The option B) `for(i < x.length)` is not the correct syntax for the 'for' loop, the correct 'for' loop syntax is given by option C).

JavaScript and Java

JavaScript is not the same as Java. There are some similarities in terms of syntax like curly braces, quotes on strings and semi colons. JavaScript is formally known as ECMAScript. It can also be called JS. JavaScript and Java are completely distinct languages.

JavaScript is built to create really powerful web-based applications while Java is used more for standalone applications like Android apps.



HTML: Hyper Text Markup Language

- Not a programming language- there are no for loops, no variables etc.
- Used to display what we want on web-pages
- A markup language just to describe what must be shown on the screen, specifically for web browsers
- Structured, rule based language
- Contains various tags – words with alligator braces around them

A typical HTML program:

1. Tags

HTML document always starts with the 'html' tag:

'html' tag

```
// At the start of every HTML document
<html>
```

```
// At the end of every HTML document
</html>
```

'head' and 'body' tags

```
<html>
  <head>

    // Header of the webpage, describes how the 'body' of
    // the code will be described

  </head>
  <body>

    // Body of the webpage, this section has all the code
    // that results in whatever you see and experience on a
    // webpage like all the nice colors, pictures, buttons,
    // what happens when you hover over an area on the page
    // or when you click a button etc.

  </body>
</html>
```

As shown above, every open tag must be closed.

'div' tags

```
<div>  
</div>
```

'div' tags are found within the body tag and are used to divide up the webpage into logically segregated regions.

2. HTML elements

HTML documents are made of individual components called as elements. They generally represent some meaning, for example the 'title' element represents the title of the document. Elements are generally written with a start and end tag with the content in between. The tags are composed of the name of the element with angles brackets with a slash included in the end tag.

Example: **p** element below represents a paragraph and is written as,
`<p>In the HTML syntax, most elements are written ...</p>`

3. Attributes

HTML elements can have attributes which are modifiers of HTML elements. They appear as name-value pairs and are written within the start tag of an element.

```
<element_name attribute1_name="value1" attribute2_name="value2">  
(content to be modified by the element) </element_name>
```

value can be enclosed in single quotes also, but double quotes is followed generally.

Example:

```
<body>  
<input type ="button" value="Add">  
</body>
```

- This shows that there is an input element with type attribute, set to button and value attribute set to "Add", meaning that's what the button will say on the website.
- Important HTML attribute for input elements is the 'onclick' and it generally calls a function when you click the button, these functions are where JavaScript comes into picture. The attribute is basically assigned a value equal to the output of the function called.

You can right click on any web-page and say "view source page" to bring out the HTML document for the webpage.

Elements under the tag `<head>` are not actually seen on the webpage. They are for describing how that webpage will show up. Inside the `<body>` tag you will find exactly what is shown on the webpage.

Example on how to call a function (from your HTML document for lab 4, just open the HTML document in notepad++ to check):

```
<input type="button" value="Hit"    onclick="doHit()"    />  
<input type="button" value="Stand" onclick="doStand()" />
```

where `doHit()` and `doStand()` are functions that have been written in the JavaScript code, notice that here they are put in quotation marks as well, the parenthesis `'()`' are a hint that it may be a function call.