TKO5110 - Web Programming

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JavaScript exercises

1. JavaScript usually makes type conversions automatically, but sometimes programmer needs to write type conversions. Show code for JavaScript conversions from strings to number types and from number types to strings.

```
// Conversion from string to number
var s = "666";
var n1 = Number(s); // returns 666 from string variable s, n1 = 666
Number("42");      // returns 42
Number("3.333");   // returns 3.33

// Empty strings are read as 0
var n2 = Number(" ");   // n2 = 0
var n3 = Number("");    // n3 = 0

// String that are not a single number cannot be converted.
// Value NaN (not a number) is returned
Number("666 42")   // returns NaN

var n = 3.14;
var s1 = String(n);    // returns a string from a number variable n, s1 = "3.14"
var s2 = String(666);      // returns a string a number literal 666, s2 = "666"
var s3 = String(333 + 333);   // returns a string from an expression, s3 = "666"

// The number method toString() works the same way.
s4 = n.toString();     // s4 = "3.14"
s5 = (666).toString();  // s5 = "666"
s6 = (222 + 222);      // s6 = "444"
```

2. Explain what happens in JavaScript code on this page javascript1.html

```
<script type="text/javascript">
var x = new Array(5);          // Create new array of length 5
var i = 0; // Assign value 0 to variable i

// For loop runs 5 times placing numbers from 0-4 to the indexes 0-4 of array x.
// The loop also writes each number on the web page, adding line break after the // number and hence each number
is printed on its own line.
for (i = 0; i < 5 ; i++) {
  x[i] = i;
  document.write(x[i] + "<br>");
};

// For loop runs 9 times placing numbers 25-34 to the indexes 25-34 of array x.
// Like in the previous loop, each number placed in the array is also written on // the web page on its own line.
for (i = 25; i < 35; i++) {
  x[i] = i;
  document.write(x[i] + "<br />");
};

// Write a line break on the document
document.write( x + "<br />");
```

JavaScript exercises

```
// Attempt to write variable from index 22 of array x. A value for that index
// hasn't been defined and hence x[22] returns value 'undefined'
document.write( x[22] + "<br />")

</script>
```

3. Write an HTML5 page containing JavaScript code, which prompts user to give integer value n, then computes n fibonacci numbers.

Answer in file fibonacci.html

4. Write an HTML5 page containing JavaScript code, which asks user to feed three integers, then your code calculates the sum, maximum and minimum of these values and prints an HTML table, where these value are placed.

Answer in file threeIntegers.html

5. Write a JavaScript function, which tests if given string is palindromic.

```
// Recursive implementation

function isPalindrome(str){

  if(str.length <= 1){
    return true;
  }
  else if( str.charAt(0) != str.charAt(str.length - 1) ){
    return false;
  }
  else {
    return isPalindrome(str.substring(1, str.length-1));
  }

}
```