

Lecture 6

JavaScript 2

Displaying results of calculations

Using JavaScript for Calculations

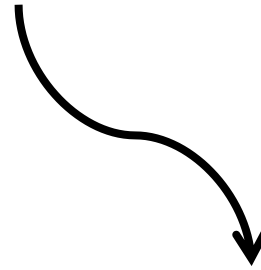
Water Usage Calculation

Calculate average water usage per day

Litres:

No. of days:

Calculate value



You used an average of 20 litres per day

Litres:

No. of days:

Calculate value

Calculation Question 1

- **Water usage Example**
- Create a webpage with 2 input boxes and a button.
- When the user presses the button, a function called **usage()** is called, which will compute the average number of litres of water used per day.
- The average is calculated by dividing the litres by the days (**litres / days**).
- Display the result in the form.

HTML - using ids

WaterUsage.html

```
<body>
<h2><div id="output">Calculate average water usage per day</h2></div>

Litres: <input type="text" size= "4" id="litres"><br/>
No.of days: <input type="text" size= "4" id="days"><br/>

<input type="button" value="Calculate value" onclick="mpg()" />
```

JavaScript

WaterUsage.html

```
<script type="text/javascript">
function mpg()
{
var days = document.getElementById("days").value;
var ltrs = document.getElementById("litres").value;
var avg = ltrs/days;

document.getElementById("output").innerHTML = "You used an average of " + avg + " litres per day";

}
</script>
</head>
```

Calculation Question 2

- Create a Purchase Form.
- The user selects a device from a dropdown menu
- The user enters the quantity required and presses submit.
- The subtotal (item price * quantity), tax and grandtotal are displayed.
- A popUp message is also displayed.

Calculations using JavaScript

Purchase Form

Choose Device: Quantity required


Subtotal:
Tax (10%):
Total:

Purchase Form

Choose Device: Quantity required

Subtotal = 3600.00
Total Tax = 360.00 (@ 10%)
Total = 3960.00

Message from webpage

 Check your Total

Calculation Question 2 – HTML

```
<form onSubmit = "calculateTax()">

<h1> Purchase Form</h1>
Choose Device:
    <select id="choice" >
        <option value="">Select Device</option>
        <option value="100">Netbook $100.00</option>
        <option value="300">Smart Phone $300.00</option>
        <option value="400">Tablet PC $400</option>
    </select>

    &nbsp; &nbsp; &nbsp; &nbsp; &nbsp;
    |
Quantity required
    <input id="quantity" type="text" name="quantity"size = "1">
    <br>

<hr>
<div id="subtotal"> Subtotal:</div>
<div id="tax">      Tax (10%)      : </div>
<div id="total">    Total      : </div>

<hr>

<input type="submit" value="Calculate" />

</form>
```

Calculation Question 2 – HTML

- Call function `calculateTax()` when press Submit button
- Using `onSubmit()` eventhandler placed in the `<form>` tag
- Notice – the price of each item is stored in the value attribute of the `<option>` tag
- E.g.
- `<option value = "100">Netbook $100</option>`
- This enables you to use the price of the item in a calculation in JavaScript.

Calculations using JavaScript ..1

```
function calculateTax()
{
// variable declarations
var taxRate=0.10;
var tax=0;
var subTotal=0;
var total = 0;

// Get info from form -- USING the VALUE attribute

var quantity = document.getElementById("quantity").value;
var price = document.getElementById("choice").value;

// Initial Calculations

subTotal = quantity * price;
tax = subTotal * taxRate;
total = subTotal + tax;
```

JavaScript..2

```
// Round to 2 decimal places

tax = tax.toFixed(2);
subTotal = subTotal.toFixed(2);
total = total.toFixed(2);

//Move Data back to Form

document.getElementById('subtotal').innerHTML = "Subtotal = " + subTotal;
document.getElementById('tax').innerHTML = "Total Tax      = " + tax + "    (@ 10%)";
document.getElementById('total').innerHTML = "Total        = " + total;

// Alert()

alert("Check your Total");

}
</script>
```

Calculations using JavaScript

- Declare variables for using in program
- Get data from Form – using the value attribute with `getElementById(“ ”)`
- Do the initial calculations – subtotal, tax, grand total
- Round the figures to 2 decimal places, using `.toFixed(2)`
- Move the data back into the form using `document.getElementById(“ ”).innerHTML =`