

# JavaScript: Exercises

## Resources

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In carrying out the following exercises you should make use of the following resources:

JavaScript: Introduction and Reference

<http://www.w3schools.com/js/>

## HTML Template

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```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Introduction to JavaScript: Exercises</title>
</head>

<body>
  <h1>Introduction to JavaScript: Exercises</h1>
  <div id="content">
    <span id="jsOutput">This text will be replaced with JavaScript output.</span>
  </div>
</body>

</html>
```

Use the code above as your HTML template for the exercises below.

Validation

You should validate your HTML documents using the following url:

<http://validator.w3.org/>

## Task 1

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Create a new HTML document based upon the HTML template.

Create a new external JavaScript file called 'Task1.js' and link to it from within your HTML:

```
<script src="Task1.js"></script>
```

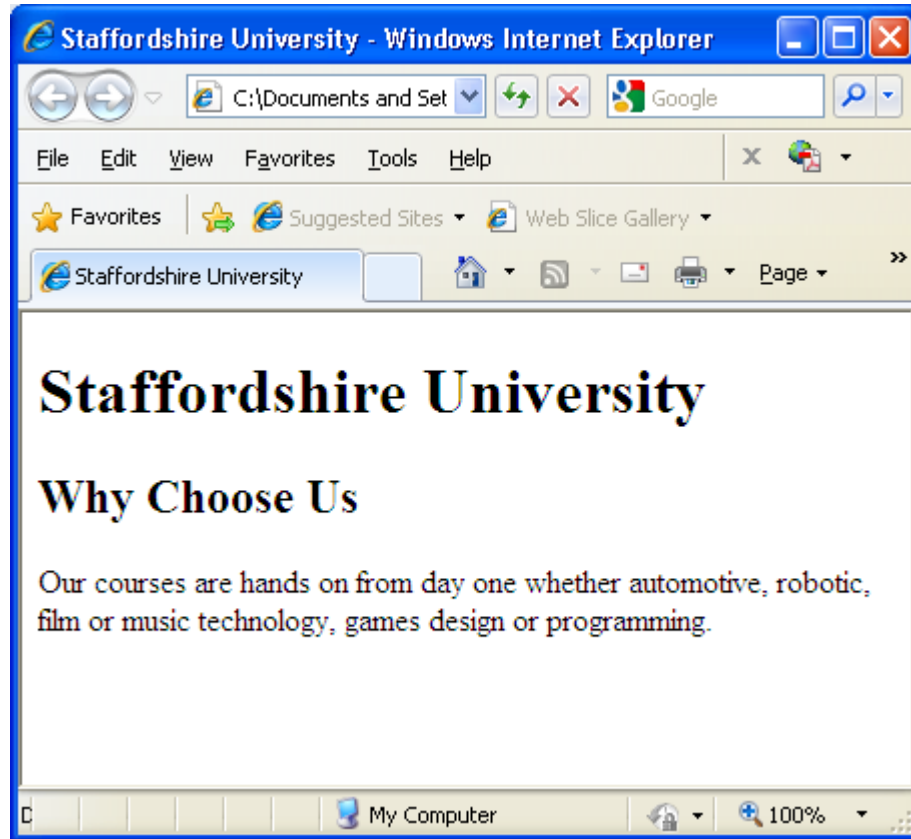
Place the following code in your external JavaScript file and save it.

```
function initialise()
{
  var heading = "Why Choose Us";
  var description = "Our courses are hands on from day one whether
automotive, robotic, film or music technology, games design or
programming.";
  var mySpan = document.getElementById('jsOutput');
  mySpan.innerHTML = heading + description;
}
```

```
window.onload = initialise;
```

Save your web page and view it in a web browser.

Alter the JavaScript code so that your browser output resembles the screenshot below (you will have to insert HTML tags to do this):



Validate your HTML document and correct any errors that you encounter.

Assigning a value to the `.innerHTML` property allows you to display a string that includes HTML.

## Task 2

Create a new HTML document based upon the HTML template.

Create a new external JavaScript file called 'Task2.js' and link to it from within your HTML.

Place the following code in your external JavaScript file and save it.

```
function calculateVAT(value)
{
}

function initialise()
{
    var userValue = 25;
    var mySpan = document.getElementById('jsOutput');
    mySpan.textContent = calculateVAT(userValue);
}
```

```
}  
window.onload=initialise;
```

Fill in the empty function `calculateVAT` with the necessary JavaScript to return a value representing the amount of VAT owing for a given `userValue` (in this case 25) worked out at a rate of 17.5% (the return value should be 4.375).

You will need to use the *return* keyword to return a value from a function.

## Task 3

Create a new HTML document based upon the HTML template but replace the `<body>` contents with the following.

```
<h1>Introduction to JavaScript: Exercises</h1>  
<h2>Output from Exercises</h2>  
<div id="jsOutput">This text will be replaced with JavaScript  
output.</div>
```

Create a new external JavaScript file called 'Task3.js' and link to it from within your HTML.

In your external JavaScript file output a multiplication table to the browser using the `<table>` element (your JavaScript output should replace the contents of the `<div id="content">` element). Your multiplication table should show all multiplication tables up to 10 x 10. Don't worry about formatting as long as your output looks similar to the following.

**Introduction to JavaScript: Exercises**

**Output from Exercises**

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

Using nested loops will reduce the amount of code that you need to accomplish this task.

## Task 4

Create a new HTML document based upon the HTML template but replace the `<body>` contents with the following.

```
<h1>Introduction to JavaScript: Exercises</h1>  
<h2>Output from Exercises</h2>  
<div>  
  <button id="click">Click Me!</button>  
  <p id="jsOutput">This will be replaced by the current date and  
time.</p>  
</div>
```

Create a new external JavaScript file and link to it from within your HTML.

When the button is clicked the current date and time should replace the contents of the paragraph element.

*Date()* will return the value that you need.

## Task 5

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Create a new HTML document based upon the HTML template but replace the *<body>* contents with the following.

```
<h1>Introduction to JavaScript: Exercises</h1>
<h2>Output from Exercises</h2>
<div>
  <button id="click">Click Me!</button>
  <p id="jsOutput">This will be replaced by Heads or Tails.</p>
</div>
```

Create a new external JavaScript file and link to it from within your HTML.

Every time the button is clicked a 'coin toss' should occur with the output of Heads or Tails.

Use *Math.floor(Math.random() \* 2) + 1* to randomly produce either 1 or 2.