

Creating a JavaScript Quiz

1. Creating a JavaScript Script element

```
1 <html>
2 <head>
3
4 <script type="text/javascript">
5
6
7 </script>
8 </head>
9
10
11 <body>
12
13 </body>
14
15 </html>
16
```

To start using JavaScript in a HTML page you need to use the `<script>` tag. The JavaScript you use should be placed within the open and close script tags.

The script tag should be placed in the head tag within the HTML page.

2. Defining and calling a function

```
1 <html>
2 <head>
3
4 <script type="text/javascript">
5 function test(form){
6
7 alert("Test");
8 }
9
10 </script>
11 </head>
12
13
14 <body>
15 <form>
16 <input name="Submit1" type="submit" value="submit" onclick="test(this.form)">
17
18 </form>
19 </body>
20
21 </html>
22
```

A function is a type of sub-routine, it allows you to define a section of code under a name. In this case the code has been defined as “test”.

A function only executes the code inside it when it is called. In this example the function is called when the submit button is pressed.

You can see that an `alert()` method has been added to the JavaScript function. This will make an alert box appear with the text “Test” upon the web browser when the submit button is pressed.

3. Using an If statement to check a set of radio buttons

```
1 <html>
2 <head>
3
4 <script type="text/javascript">
5 function test(form){
6 if (form.elements[1].checked) {
7 alert("Correct");
8 }
9 else{
10 alert("Incorrect");
11 }
12 }
13
14 </script>
15 </head>
16
17
18 <body>
19 <form>
20 <input name="Radio1" type="radio" value="Rome">Rome
21 <input name="Radio1" type="radio" value="London">London
22 <input name="Radio1" type="radio" value="Beijing">Beijing
23 <input name="Submit1" type="submit" value="submit" onclick="test(this.form)">
24
25 </form>
26 </body>
27
28 </html>
29
```

Within the form tag of the HTML page we have added three radio buttons. The radio buttons all have the same name "Radio1", this is important. A set of radio button can only have one option selected, if the radio buttons had a different name you would be able to select all the options.

Within the JavaScript, an if statement has been added. The if statement follows this structure

```
if(condition){
    if the condition is true...do something
}
else {
    if the condition is false...do something
}
```

This checks if the 2nd radio button has been selected, if the statement is true it displays an alert stating "Correct", else it will display an alert stating "Incorrect".

The Radio buttons have been indexed.

The first radio button which holds the value "Rome" has the index value 0.

The second radio button which holds the value "London" has the index value 1.

The third radio button which holds the value "Beijing" has the index value 2.

The if statement checks the form.elements[1] (which is the second radio button) to see if it is checked.

Using a for loop

```
1 <html>
2 <head>
3
4 <script type="text/javascript">
5 function test(form){
6   for (i=0; i<3; i++) {
7     alert(i);
8   }
9
10  if (form.elements[1].checked) {
11    alert("Correct");
12  }
13  else{
14    alert("Incorrect");
15  }
16 }
17
18 </script>
19 </head>
20
21
22 <body>
23 <form>
24 <input name="Radio1" type="radio" value="Rome">Rome
25 <input name="Radio1" type="radio" value="London">London
26 <input name="Radio1" type="radio" value="Beijing">Beijing
27 <input name="Submit1" type="submit" value="submit" onclick="test(this.form)">
28
29 </form>
30 </body>
31
32 </html>
33
```

A for loop has been added to the function. This for loop will print the numbers 0,1,2 through an alert upon the page.

for (i=0; i<3; i++)

i = 0 this sets the starting value for the loop and initialises the variable i.

i<3 this is the condition for the loop to stop, when i is equal too or greater than 3 the loop will finish

i++ this increase (increments) i by 1 each cycle of the loop.

The alert is set to print the value of i.

Using a for loop to determine which radio button is selected

```
1 <html>
2 <head>
3
4 <script type="text/javascript">
5 answer1 = "London"
6 function test(form){
7
8   for (i=0; i<3; i++) {
9     if (form.elements[i].checked) {
10      if (form.elements[i].value == answer1) {
11
12        alert("Correct");
13      }
14      else{
15        alert("Incorrect");
16      }
17    }
18  }
19 }
20 </script>
21 </head>
22
23
24 <body>
25 <form>
26 <input name="Radio1" type="radio" value="Rome">Rome
27 <input name="Radio1" type="radio" value="London">London
28 <input name="Radio1" type="radio" value="Beijing">Beijing
29 <input name="Submit1" type="submit" value="submit" onclick="test(this.form)">
30
31 </form>
32 </body>
33
34 </html>
35
```

Here a for loop has been used to identify which radio button has been checked. It loops through each button to identify which one is checked.

Once it has found the checked radio button it uses an if statement to see if the value of that radio button equals the correct answer. The value of the answer is stored in the variable answer1.

Informing the user of the correct answer

```
1 <html>
2 <head>
3
4 <script type="text/javascript">
5 answer1 = "London"
6 function test(form){
7
8   for (i=0; i<3; i++) {
9     if (form.elements[i].checked) {
10      if (form.elements[i].value == answer1) {
11 alert("Correct");
12 }
13 else{
14 alert("Incorrect, the correct answer is " + answer1);
15 }
16 }
17 }
18 }
19 </script>
20 </head>
21
22
23 <body>
24 <form>
25 <input name="Radiol" type="radio" value="Rome">Rome
26 <input name="Radiol" type="radio" value="London">London
27 <input name="Radiol" type="radio" value="Beijing">Beijing
28 <input name="Submit1" type="submit" value="submit" onclick="test(this.form)">
29
30 </form>
31 </body>
32
33 </html>
34
```

Here the correct answer has been added to the alert which tells the user that they have got the answer wrong.

Now the quiz will inform the user that they have got the incorrect answer and inform them of the correct answer.

Multiple questions

To add multiple questions to the quiz you could copy and paste the JavaScript and repeat it for every question you have, however this will become messy and confusing after a while.

```

1 <html>
2 <head>
3
4 <script type="text/javascript">
5 var answer = new Array(2);
6
7 answer[0] = "London"
8 answer[1] = "Four"
9 function test(form){
10 for (j=0; j<2; j++){
11     currQuestion = j*3;
12     for (i=0; i<3; i++) {
13         if (form.elements[i+currQuestion].checked) {
14             if (form.elements[i+currQuestion].value == answer[j]) {
15                 alert("Correct");
16                 break;
17             }
18             else{
19                 alert("Incorrect, the correct answer is " + answer[j]);
20             }
21         }
22     }
23 }
24 }
25 </script>
26 </head>
27
28
29 <body>
30 <form>
31 <input name="Radio1" type="radio" value="Rome">Rome
32 <input name="Radio1" type="radio" value="London">London
33 <input name="Radio1" type="radio" value="Beijing">Beijing
34 <br>
35 <input name="Radio2" type="radio" value="Four">Four
36 <input name="Radio2" type="radio" value="Three">Three
37 <input name="Radio2" type="radio" value="Five">Five
38
39 <input name="Submit1" type="submit" value="submit" onclick="test(this.form)">
40
41 </form>
42 </body>
43
44 </html>
45

```

Here will have two for loops.

One which loops through each question we have on the quiz and another which checks to see which radio button is checked (the same for loop that was used early).

First, we create an array to store the answers in. An array is a list. `var answer = new Array(2);` the 2 identifies that it will contain to answers.

Next we create the first for loop which can go through each question. For (`j=0; j<2; j++`) Each of the questions has 3 options.

Remember this are indexed:

First button = 0, Second button = 1, Third button = 2

The second set of radio buttons continue the indexing

Fourth button = 3, Fifth Button = 4, Sixth button = 5.

`currQuestion = j * 3` this means that the set of radio buttons for the first question will have starting value 0 because `j` starts at 0 and $0 * 3 = 0$

The second set of radio buttons will have the starting value 3 because `j` will equal 1 after the first loop and $1 * 3 = 3$.

So when radio buttons are being checked

`if (form.elements[i + currQuestion])` This will check the index of `[i + currQuestion]`

The first radio button will be $0 + 0 = 0$.

The second will be $0 + 1 = 1$

The third will be $0 + 2 = 2$

The fourth will be $3 + 0 = 3$

The fifth will be $3 + 1 = 4$

The sixth will be $3 + 2 = 5$

NOTE: The quiz must have equal amount of options (radio buttons) to each question for this code to work.