

HTML 5

Web Workers

HTML



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What is a Web Worker?

- When executing scripts in an HTML page, the page becomes unresponsive until the script is finished.
- Is a JavaScript that runs
 - In the background,
 - Independently of other scripts
 - Without affecting the performance of the page.



Check Web Worker Support

- Before creating a web worker, check whether the user's browser supports it.

```
1  if(typeof(Worker) !== "undefined") {  
2      // Yes! Web worker support!  
3      // Some code.....  
4  } else {  
5      // Sorry! No Web Worker support..  
6  }
```

Create a Web Worker File

- The **postMessage()** method
 - Is used to posts a message back to the HTML page.

```
1  var i=0;
2
3  function timedCount() {
4      i=i+1;
5      postMessage(i);
6      setTimeout("timedCount()",500);
7  }
8  timedCount();
9
```

Create a Web Worker Object

- We need to call web “worker file” from an HTML page.
- The following lines checks if the worker already exists, if not - it creates a new web worker object and runs the code in "demo_workers.js":

```
11 function startWorker() {  
12     if(typeof(Worker)!="undefined") {  
13         if(typeof(w)=="undefined") {  
14             w=new Worker("demo_workers.js");  
15         }  
16         w.onmessage = function (event) {
```

Create a Web Worker Object (Cont.)

- Then we can send and receive messages from the web worker.
- Add an **onmessage** event listener to the web worker.

```
15 }  
16 w.onmessage = function (event) {  
17     document.getElementById("result").innerHTML=event.data;  
18 };  
19 } else {
```

- When the web worker posts a message, the code within the event listener is executed.
- The data from the web worker is stored in **event.data**.

Terminate a Web Worker

- When a web worker object is created, it will continue to listen for messages (even after the external script is finished) until it is terminated.
- To terminate a web worker, and free browser /computer resources, use the **terminate()** method:

```
w.terminate();
```

Lab1 : Web Worker

■ Web Browsers

- IE10, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Notepad++ or Editplus

■ Files

- webworker.html
- demo_workers.js

Lab1 : webworker.html

```
1 <!DOCTYPE html>
2 <html>
3   <body>
4     <p>Count numbers: <output id="result"></output></p>
5     <button onclick="startWorker()">Start Worker</button>
6     <button onclick="stopWorker()">Stop Worker</button>
7     <br><br>
8     <script>
9       var w;
10
11       function startWorker() {
12         if(typeof(Worker)!=="undefined") {
13           if(typeof(w)==="undefined") {
14             w=new Worker("demo_workers.js");
15           }
16           w.onmessage = function (event) {
17             document.getElementById("result").innerHTML=event.data;
18           };
19         } else {
20           document.getElementById("result").innerHTML=
21             "Sorry, your browser does not support Web Workers...";
22         }
23       }
24       function stopWorker() {
25         w.terminate();
26       }
27     </script>
28   </body>
29 </html>
```

Lab1 : demo_workers.js

```
1  var i=0;  
2  
3  function timedCount() {  
4      i=i+1;  
5      postMessage(i);  
6      setTimeout("timedCount()",500);  
7  }  
8  timedCount();  
9
```

Lab1 : Result

