CSIT128 / CSIT828

More JavaScript Examples

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Review

```
<input type="text" name="p_fee" id="fee">
```

In a form, to get user input value, we can use:

```
var feeAmount = document.getElementById("fee").value;
```

In a form, to set the value of an input field, we can use:

```
document.getElementById("fee").value = "230.50";
```

To change string into number:

```
var s = "100";
var x = Number(s);

var feeAmount = Number(document.getElementById("fee").value);
```

Review

```
<span id="mark"><b>87</b></span>
```

To get the content from an HTML element, we can use:

```
var mark = document.getElementById("mark").textContent;
```

```
var mark = document.getElementById("mark").innerHTML;
```

The first returns `87`
The second returns `<b>87</b>`

To set the content of an HTML element, we can use:

```
document.getElementById("mark").innerHTML = "90";
```

```
document.getElementById("mark").innerHTML = "<i>90</i>";
```

Review

To get a random (decimal) number from 0 (inclusive) to 1 (exclusive):

```
var x = Math.random();   //example: 0.457
```

To get a random (decimal) number from 0 (inclusive) to 10 (exclusive):

```
var x = Math.random() * 10;
```

To get a random integer from 0 (inclusive) to 10 (exclusive):

```
var x = Math.floor(Math.random() * 10);   //0,1,2,...,9
```

To get a random integer from 1 (inclusive) to 6 (inclusive):

```
var x = Math.floor(Math.random() * 6) + 1;   //1,2,3,4,5,6
```

To get a random integer from 5 (inclusive) to 15 (inclusive)?

Event

When user clicks on white circle image, it changes to black circle.

When user clicks on black circle image, it changes back to white circle.

How do we design this?

click me

click me

Event

First, I need to create two images:
- one white circle `circle1.png`, and
- one black circle `circle2.png`.

We save these two image files in the directory `images`

```
<img id="cicle" src="images/circle1.png" onClick="changeCircleImage()" />
```

```
<script>
function changeCircleImage() {
    var image = document.getElementById("circle");
    if (image.src.includes("circle1")) {
        image.src = "images/circle2.png";
    } else {
        image.src = "images/circle1.png";
    }
}
</script>
```

http://www.uow.edu.au/~dong/w3/example/js/changeCircle1.html

Event

Another solution:
http://www.uow.edu.au/~dong/w3/example/js/changeCircle2.html

```
<script>
var imageNumber = 1;

function changeCircleImage() {

    var image = document.getElementById("circle");

    if(imageNumber == 1){
      imageNumber = 2;
    }else{
      imageNumber = 1;
    }


    if (imageNumber == 1) {
        image.src = "images/circle1.png";
    } else {
        image.src = "images/circle2.png";
    }
}
</script>
```

Event

```
<button onClick="goToUOW()">Click me to visit UOW</button>
```

```
function goToUOW() {
  window.location.assign("http://www.uow.edu.au");
}
```

Event

When the user leaves the input field, a function is triggered which transforms the input text to uppercase:

```
Enter discount code:
<input type="text" id="discountCode" onChange="uppercase()">


function uppercase(){
  var e = document.getElementById("discountCode");
  e.value = e.value.toUpperCase();
}
```

Event

```
<span id="demo" onMouseDown="mouseDown()" onMouseUp="mouseUp()">
Click Me
</span>
```

```
function mouseDown() {
  document.getElementById("demo").innerHTML = "Release Me";
}

function mouseUp() {
  document.getElementById("demo").innerHTML = "Thank You";
}
```

http://www.uow.edu.au/~dong/w3/example/js/eventOnMouseUpMouseDown.html

Event

```
<span id="demo" onMouseOver="mouseOver()" onMouseOut="mouseOut()
Mouse Over Me
</span>
```

```
function mouseOver() {
  document.getElementById("demo").innerHTML = "Thank You"
}

function mouseOut() {
  document.getElementById("demo").innerHTML = "Mouse Over Me"
}
```

Dynamic content

```
<button onClick="addSubject()">
Click here to add subject
</button>

<div id="subjectList">
</div>


function addSubject(){
   //ask user for a subject code
   var subject = prompt("Enter subject code");

   if(subject != null){
      var para = document.createElement("p");
      var node = document.createTextNode(subject);
      para.appendChild(node);
      document.getElementById("subjectList").appendChild(para);
   }
}
```

http://www.uow.edu.au/~dong/w3/example/js/dynamicContent1.html

Dynamic content

```
<button onClick="addSubject()">
Click here to add subject
</button>

<ul id="subjectList">
</ul>


function addSubject(){
  //ask user for a subject code
  var subject = prompt("Enter subject code");

  if(subject != null){
    var li = document.createElement("li");
    var node = document.createTextNode(subject);
    li.appendChild(node);
    document.getElementById("subjectList").appendChild(li);
  }
}
```

http://www.uow.edu.au/~dong/w3/example/js/dynamicContent2.html

Animation: setInterval

```
<button onClick="alertForever()">
Click here if you like alert!
</button>
```

```
function alertForever(){
  //calling alertFunction for every 5000 miliseconds
  var alertSchedule = setInterval(alertFunction, 5000);
}

function alertFunction() {
  alert("Hello!");
}
```

Animation: clearInterval

```
<button onclick="stopIt()">
Click here if you have enough!
</button>

// use global variable so that it can be used
// in both functions: alertForever() and stopIt()
var alertSchedule;

function stopIt(){
  clearInterval(alertSchedule);
}

function alertForever(){
  //calling alertFunction for every 5000 miliseconds
  alertSchedule = setInterval(alertFunction, 5000);
}

function alertFunction() {
  alert("Hello!");
}
```

http://www.uow.edu.au/~dong/w3/example/js/animation2.html

Animation: Clock ticking

```
<button onclick="startClock()">
Click here to start the clock
</button>

<span id="clock"></span>



function startClock(){
  //calling displayClock for every 1000 miliseconds
  var clockSchedule = setInterval(displayClock, 1000);
}

function displayClock() {
  document.getElementById("clock").innerHTML = new Date();
}
```

Animation: Moving text

```html
<button onclick="moveText()">
Click here to move text
</button>

<span id="movingText" style="position:absolute;">
Moving text
</span>
```

```javascript
function moveText() {
  var e = document.getElementById("movingText");
  var pos = 0;
  var moveTextSchedule = setInterval(move, 50);

  function move() {
    pos++;
    e.style.top = pos + 'px';
    e.style.left = pos + 'px';

    if (pos == 300) {
      clearInterval(moveTextSchedule);
    }
  }
}
```

http://www.uow.edu.au/~dong/w3/example/js/animation4.html

Animation: Slide show

```javascript
function slideShow() {
  var imageSchedule = setInterval(changeImage, 2000);
}

function changeImage() {
  var imageList = ["images/simpson2.png", "images/simpson4.png",
"images/simpson6.png", "images/simpson1.jpg", "images/simpson3.jpg",
"images/simpson5.png", "images/simpson7.jpg"];

  //get a random image index
  var index = Math.floor(Math.random() * imageList.length);

  var image = document.getElementById("simpson");

  //set the image source
  image.src = imageList[index];
}
```

```html
<img id="simpson" src="images/simpson1.jpg" height="500px" />

<script>
slideShow();
</script>
```

http://www.uow.edu.au/~dong/w3/example/js/animation5.html

References

`http://www.w3schools.com/js`

Robert W. Sebesta, *Programming the World Wide Web*, Pearson.