

## MOUSE EVENTS

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#### AFTER THIS PRESENTATION

You'll know how to use mouse events

#### **WE WILL LOOK AT**

onclick

onmousedown

onmouseup

onmouseover

onmouseout

#### **MOUSE EVENTS**

- The most commonly used mouse events:
  - onclick when the user clicks on an object
  - onmousedown when the user presses down the mouse button
  - onmouseup when the user lets go of the mouse button
- onclick = onmousedown followed by onmouseup

```
<html><body><script>
  function good choice() { alert("Good choice!"); }
  function bad choice() { alert("I don't agree!"); }
  </script>
  <h1>Click on the best social network...</h1>
  <img src="facebook icon.png"</pre>
       onclick="bad choice()">
  <img src="google plus icon.png"</pre>
       onclick="bad choice()">
  <img src="twitter icon.png"</pre>
       onclick="good choice()">
</body></html>
```

#### MORE MOUSE EVENTS

鼠标放在object上

- onmouseover mouse is moved over an object
- onmouseout mouse is moved away from an object

```
<html><body><script>
    function change colour( new colour ) {
      document.getElementById("myDiv")
              .style.background=new colour;
  </script>
  <div id="myDiv"
    style="position:absolute; background:yellow;
    left:300; top:100; width:300; font-size:52pt"
    onmouseover="change colour('red');"
    onmouseout="change colour('yellow');">
    Move your mouse over this ...
    then move it out...
  </div>
</body></html>
```



### TIMER EVENTS

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#### AFTER THIS PRESENTATION

You'll know how to use timer events

#### **WE WILL LOOK AT**

setTimeout setInterval

clearTimeout clearInterval

#### **TIMERS**

- Timers are very useful for dynamic web page behaviour
- Set a timer like this:

```
var the_timer;
the_timer=setTimeout(do_something, 1000);
```

- do\_something() will be executed 1 second later
- The value 1000 is in milliseconds, so 1000=1 second

```
<html><head><script>
  var wait duration;
                                        no need to change to integer?
  function set things up()_{
    wait duration = prompt("How long do you " +
                           "want to sleep?");
    setTimeout(show wake up message, wait duration);
  function show wake up message() {
    alert("WAKE UP! WAKE UP! WAKE UP!!");
</script></head>
  <body onload="set things up()">
    <h1>Alarm clock example</h1>
  </body>
</html>
```

#### TIMER EXAMPLE - MOVING AN IMAGE

```
<html><head><script>
  var the timer, x position = 0, the image;
  function set timer()
    the image=document.getElementById("stones image");
    x position=x position+1;
    the image.style.left=x position;
    the timer = setTimeout(set timer, 50); recursive
  </script></head>
  <body onload="set timer()">
    <img src="stones.png" id="stones image"</pre>
      style="position:absolute; left:0">
</body></html>
```

#### **STOPPING A TIMER**

• If a timer is started like this:

```
var the_timer;
the_timer=setTimeout(do_something, 1000);
```

• Then stop it like this:

```
clearTimeout(the_timer);
```

```
<html><head><script>
  var the timer, x position = 0, the image;
  function set timer() {
    the image = document.getElementById("stones img");
    x position = x position + 1;
    the image.style.left = x position;
    the timer = setTimeout(set timer, 50); }
</script></head>
<body onload="set timer()">
  <img src="stones.png" id="stones img"</pre>
       style="position:absolute; left:0">
  <button onclick="clearTimeout(the timer)">
      Stop!</button>
</body></html>
```

#### **SETINTERVAL**

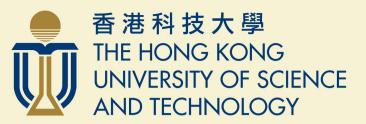
- setInterval() repeatedly does something
- Start it like this:

```
var the_timer;
the_timer=setInterval(do_something, 2000);
```

- do\_something() will be executed every 2 seconds
- To stop it:

```
clearInterval(the_timer);
```

```
<html><head><script>
  var the timer, x position = 0, the image;
  function do timer(){
    the image = document.getElementById("stones img");
    x position = x position + 1;
    the image.style.left = x position;
</script></head>
  <body onload="the timer=setInterval(do timer, 50)">
    <img src="stones.png" id="stones img"</pre>
      style="position:absolute; left:0">
    <button onclick="clearInterval(the timer)">
        Stop!</button>
</body></html>
```



# ADDING EVENTS USING JAVASCRIPT

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#### AFTER THIS PRESENTATION

You'll able to set up events using JavaScript

#### WE'LL LOOK AT

addEventListener()

removeEventListener()

#### ADDING A HANDLER USING HTML

Adding an event to an element in HTML:

```
<html><head><script>
  function do_something() {alert("Page has loaded");}
</script></head>
<body onload="do something()"></body>
</html>
```

• do\_something() is the event handler for this event

#### ADDING A HANDLER USING JAVASCRIPT

using javascript

We can also add an event to an element:

#### ADDING A HANDLER USING JAVASCRIPT

Another way:

using javascript

#### 加载多个events

how to do?

# IF YOU HAVE MORE THAN ONE EVENT HANDLER

- Event handlers are stored in an array
- When an event happens, all the handlers are executed
- They are executed in the order they are added



events will execute one by one

#### REMOVING AN EVENT HANDLER

To remove an event handler:

```
var theBody = document.getElementById("theBody");
theBody.removeEventListener("load", do_something);
```

```
<html><body>
  <button id="btn0" onclick=" alert('Hello!') ">
    Click Me!</button><br>
  <button id="btn1">Remove Listener/button>
  <script>
    function do something() { alert('Clicked'); }
    var btn0 = document.getElementById("btn0");
    btn0.addEventListener("click", do something);
   var btn1 = document.getElementById("btn1");
    btn1.addEventListener("click", function() {
      btn0.removeEventListener("click", do something);
    });
</script></body></html>
```