

# jQuery

Adding behaviour...

# Lecture Plan

- Review of last lesson
- Adding behaviour
  - click, mouseover
- Animation
  - fade, slideDown
- Navigation
  - parent, find, next
- Ajax
  - Getting data from the server

## Previously

- Write less, do more
- jQuery is a JavaScript library
- It makes writing JavaScript easier
- It smooth out some browser incompatibilities

# Loading jQuery

```
<script src='https://code.jquery.com/jquery.min.js'>  
</script>
```

- You can download the library from CDN.
- This means it may be your user's cache.

## `$(function(){...})`

- `$` takes the ready function as a parameter.
- The function is executed when the page has loaded.
- This is a useful time to set up the page

# The \$ function to select

- The \$ function returns a list of matching elements
- It uses css style matches
- It uses XPath style matches

```
<table id='key'>
  <caption>Key</caption>
  <tr><th>HCI</th><td>Human Computer Interaction</td></tr>
  <tr><th>ISO</th><td>Information Systems in Organisations</td></tr>
  <tr><th>SD</th><td>Software
</table>
```

```
$(function(){
  $('#key th').css('color','red');
});
```

# Function css

```
$('#key th').css('color','red');
```

- The \$ function returns a list of elements
- The css function is applied to each of these elements
- The css function can take an attribute and a value as shown
- It can also take a “map” of attribute/value pairs:

```
$('#key th').  
  css({backgroundColor:'black',color:'white'});
```



# A link to “toggle” the second table

[Hide key](#)

## Timetables

Schedule

	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00
<b>Mon</b>	INF07105 ISO A17		IMD07103 HCI A17					SET07102 SD A17
<b>Tue</b>		SET07102 SD JKCC05				IMD07103 HCI H19		
<b>Wed</b>								
<b>Thu</b>		INF07105 ISO A17		INF07105 ISO A17		IMD07103 HCI JKCC06		
<b>Fri</b>				SET07102 SD A17	SET07102 SD A17			

Key

<b>HCI</b>	Human Computer Interaction
<b>ISO</b>	Information Systems in Organisations
<b>SD</b>	Software Development in Java



# Functions required

- **html**
  - This has two forms
  - `html()` returns the contents of the node as a string
  - `html("one two three")` changes the contents
- **click**
  - This property attaches a function that will be applied when the user clicks
- **fadeIn and fadeOut**
  - `fadeOut` makes an element disappear – it can take “fast” or “slow” or milliseconds

## Add the link text

```
$(document).ready(  
  function () {  
    $('body').prepend($('<div/>',  
      {text:'Hide key',  
        css:{color:'blue', cursor:'pointer'},  
      }));  
  });
```

- We add the div, set the text, make it blue and change the cursor – all of this to encourage the user to click on it.

# Add Behavior

```
$('#body').prepend($('#<div/>',  
  {text:'Hide key',  
    css:{color:'blue', cursor:'pointer'},  
    click:function(){  
      $('#key').toggle();  
    }  
  }));
```

# The message is wrong

- We need to be able to check if the #key table is visible.
- A common technique is to count the elements: \$('#key:visible') is a list of elements with id key that are visible – this list should be of length 0 or 1

```
if ($('#key:visible').length==1){
    $('#key').fadeOut('slow');
    $(this).text('Show Key');
}else{
    $('#key').fadeIn('slow');
    $(this).text('Hide Key');
}
```

## mouseover and mouseout

- You can change elements on mouseover.
- You can use **this** to refer to the element you are over:
- Notice that only **non** empty items are affected

```
$('#table td:not(:empty)').mouseover(function(){  
    $(this).css('background','red');  
});  
$('#table td').mouseout(function(){  
    $(this).css('background','inherit');  
});
```

# A more complicated example

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# Highlight related cells

```
$('td').mouseover(function(){  
    var m = $(this).attr('class');  
    $('.'+m).addClass('hi');  
});
```

```
$('td').mouseout(function(){  
    $('hi').removeClass('hi');  
});
```

```
.hi{  
    background-color:yellow;  
}
```

# filter

- Applied to a list of elements
- Takes a function that returns true or false
- The function can use the index or the object **this**
- It returns only those elements that pass the test



## find

- find is applied to a list of elements
- You can include css or XPath strings
- It searches the descendants of the element and returns those that match
- The function parents does the same thing for ancestors

## first

- The function first returns only the first element from the list
- The function **last** does something similar
- You can include a css or XPath string as a condition

# Show and Hide

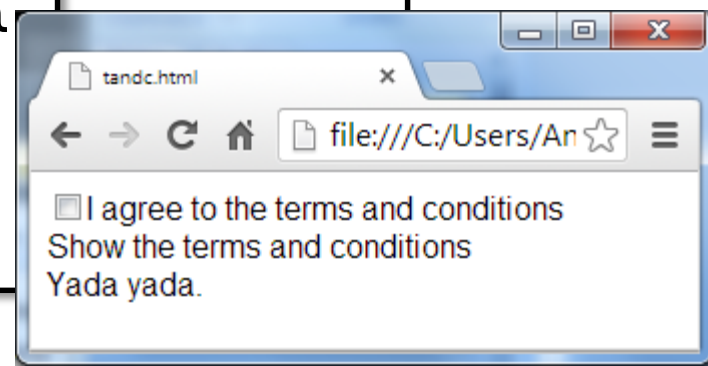
- You can show or hide an element from a click

```
<div><input type=checkbox />I agree to the terms and conditions</div>  
<div id='whatarethey'>Show the terms and conditions</div>  
<div id='terms'>  
Yada yada.  
</div>
```

```
#terms{  
  display:none;  
}
```

```
#whatarethey{  
  cursor:pointer;  
}
```

```
$(function(){  
  $('#whatarethey').click(function(){  
    $('#terms').show();  
  });  
});
```



# Show, hide, toggle, fadeIn, fadeOut

- You can also use toggle()
- You can give the show/hide the speed
  - “fast”, “slow”, 500
- There are other effects that you can use:
  - fadeIn/fadeOut
  - slideUp/slideDown
- You can use jQuery UI to get far too many more



# Animation

- You can animate items

```
$('#d1').click(function(){
    $(this).animate({'margin-left':500});
});

$('#d2').click(function(){
    $(this).animate({'width':'20ex'});
});

$('#d3').click(function(){
    $(this).animate({'margin-left':'20ex'},
                    3000,function(){
    $(this).animate({'margin-left':'0ex'});
    });
});
```

# toggleClass

- Often it is best to use a css class to provide a level of indirection
- If you want to allow the user to select an item or several items then the following pattern works well:

```
$('#li').click(function(){  
    $(this).toggleClass('hi');  
})
```

```
$('#li').click(function(){  
    $('.hi').removeClass('hi');  
    $(this).addClass('hi');  
})
```

# Multiple Choice – Choose One

- In the multiple choice exam you must select exactly one answer.

# Summary

- You can attach a function to an action:
  - `$('#target').click(function(){alert("You clicked!");})`
  - `$('#div').mouseover(function(){$(this).css{'color','red'}});`
- The functions are anonymous
- **this** refers to the item that has been clicked, usually you need to use `$(this)`
- Traversal – you can get to related nodes using `find`, `filter`, `parent`...