



MBI

Molecular Biomedical Informatics

分子生醫資訊實驗室

W e b P r o g r a m m i n g

網 際 網 路 程 式 設 計

JavaScript

JavaScript

- Executed by browser
 - completely different to Java
 - script language (腳本語言)
- So, it is just a programming language
 - for example, it can accumulate from one to ten
 - executed by browser, thus no internet is required
- Its survival is a miracle
 - heard of Netscape?
 - [Code Rush: Netscape Mozilla 紀錄片 1998 - 2000](#)
 - [網路演進](#)
 - [List of languages that compile to JS](#)

Its advantage: integration with web

- When integrating with web, the most important thing is to show the result
- `document.getElementById('foo').value='bar';`
 - `document` is an object of Document Object Model (DOM)
 - `getElementById()` is a `method` of `document`, which returns a DOM object
 - `value` is a `attribute` of an input object, where `#foo` is a `<input>`
- You may consult HTML and CSS references for available properties and [here](#) for objects and methods

How to select .foo objects?

- JavaScript `getElementsByClass` function
- ```
function getElementsByClass(class, domNode, tagName) {
 if (domNode == null) domNode = document;
 if (tagName == null) tagName = '*';
 var el = new Array();
 var tags = domNode.getElementsByTagName(tagName);
 var sc = " "+class+" ";
 for (i=0, j=0; i<tags.length; ++i) {
 var tc = " " + tags[i].className + " ";
 if (tc.indexOf(sc) != -1)
 el[j++] = tags[i];
 }
 return el;
}
```

Painful





Actually we do have a smart way to **select** document elements

# jQuery

- A Javascript library that every web site should use
- What is a library (module)? If many people do the same things, these things should become a library
- The advantage is that code becomes simple and understandable
  - `jQuery( '.foo' ).val( 'bar' );`
- The disadvantage is that you have to learn more functions, but totally worthy
  - [Main Page - jQuery JavaScript Library](#)



```
jQuery('.foo').css('color', 'red');
```

Understand this, and you know almost all fancy transitions

Remember the [CSS Zen Garden](#)?

## A more advanced function, animate()

- `jQuery('.foo').animate({  
    'margin-left': '100px',  
}, 2000, function(){  
    // animation completed  
});`



In addition to ‘show the result’, there is another important things while integrating with web

# Input (event)

- All web transitions are caused by events (such as clicking a button). This is the so-called **event-driven** programming (事件導向)
  - not specific for web programming, **windows programming** (視窗程式設計) and any programming in a **multi-tasking** environment (多工) are based on such a concept
- `jQuery( '#foo' ).click(function(){...});`
  - jQueryify is a good tool to test jQuery
  - suppose that #foo is a `<button>`
  - `click` is an event (`.click()` - jQuery API)
  - Here we used the trick of **anonymous function**. Please be familiar with it since this field uses it a lot.

# JavaScript references

- [JavaScript Garden](#)
- [Learn jQuery & JAVASCRIPT for free](#)
- Some interesting concepts are widely used, but not unique, in JavaScript
  - anonymous function, callback function, closure, functional programming ([那些 Functional Programming 教我的事](#))
- Note that they are for JavaScript rather than for web programing with JavaScript

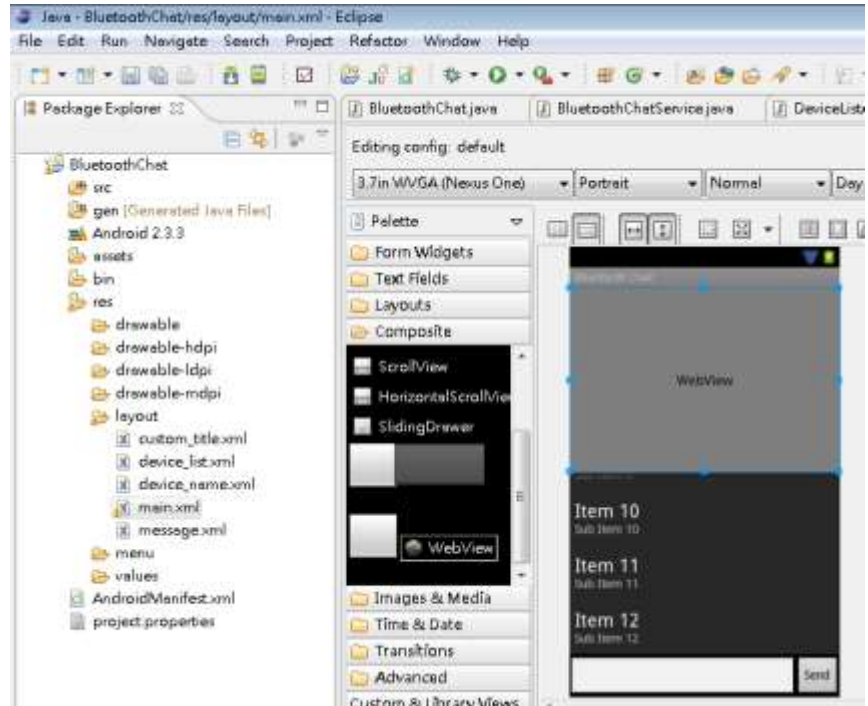


# Any Questions?

about JavaScript and jQuery?

# Develop an app with these techniques

- WebView
- Various frameworks
  - [box2dweb](#)
- Cross-platform



# Today's assignment

## 今天的任務



# Make your web site dynamic

- Implement at least one dynamic effect ([see these sample effects for some inspiration](#))
- Reference
  - [8 Layout Solutions To Improve Your Designs](#)
  - [40 Super-Neat JavaScript Plugins](#)
  - [45+ New jQuery Techniques For Good User Experience](#)
- Your web site (<http://merry.ee.ncku.edu.tw/~xxx/cur/>) will be checked not before 23:59 10/15 (Tue). You may send a report (such as some important modifications) to [me](#) in case I did not notice your features.

# Appendix

## 附錄

# If we have time, I want to discuss...

- Any web effects you want to learn?
- JavaScript Garden