



Molecular Biomedical Informatics  
分子生醫資訊實驗室

Web Programming  
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
  - notice that it is executed by browser, which means **no internet connection is required**
- Its survival is a miracle
  - heard of Netscape?

# 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(searchClass, domNode, tagName) {  
    if (domNode == null) domNode = document;  
    if (tagName == null) tagName = '*';  
    var el = new Array();  
    var tags = domNode.getElementsByTagName(tagName);  
    var sc = " "+searchClass+" ";  
    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

# 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](#)?

## 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.

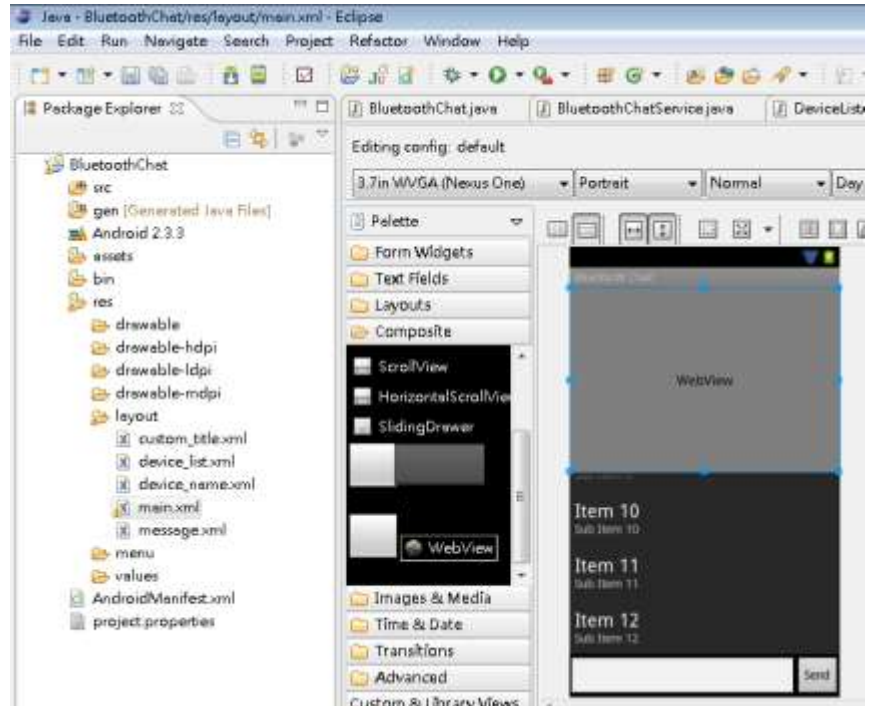
# JavaScript references

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



# 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](#)) for your future requirements. If you have no ideas, try a slideshow facility, which makes your web site more professional.
- 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 10/14 (Sun). 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