

This is ~~CS50~~ CS164

Mobile Software Engineering

```
diff cs50 cs164
```

HTML5, PHP, JavaScript, Objective-C

workload

```
typedef struct node
{
    int n;
    struct node *next;
}
node;
```

```
typedef struct node
{
    student *student;
    struct node *next;
}
node;
```

```
typedef struct
{
    int id;
    char *name;
    char *house;
}
student;
```

```
void
sort(int values[], int n)
{
    // TODO
}
```



```
/*
 * Returns true if word is in dictionary else false.
 */
bool check(const char *word);

/*
 * Loads dictionary into memory. Returns true if successful else false.
 */
bool load(const char *dictionary);

/*
 * Returns number of words in dictionary if loaded else 0 if not yet loaded.
 */
unsigned int size(void);

/*
 * Unloads dictionary from memory. Returns true if successful else false.
 */
bool unload(void);
```

```
function validate()
{
    if (document.forms.registration.email.value == "")
    {
        alert("You must provide an email address.");
        return false;
    }
    else if (document.forms.registration.password1.value == "")
    {
        alert("You must provide a password.");
        return false;
    }
    else if (document.forms.registration.password1.value != document.forms.registration.password2.value)
    {
        alert("You must provide the same password twice.");
        return false;
    }
    else if (!document.forms.registration.agreement.checked)
    {
        alert("You must agree to our terms and conditions.");
        return false;
    }
    return true;
}
```

```
$(document).ready(function() {
    $("#registration").submit(function() {
        if (!$("#email").val().match(/.+@.+\.edu$/))
        {
            alert("You must provide a .edu email address.");
            return false;
        }
        else if ($("#password1").val() == "")
        {
            alert("You must provide a password.");
            return false;
        }
        else if ($("#password1").val() != ($("#password2").val()))
        {
            alert("You must provide the same password twice.");
            return false;
        }
        else if (!$("#agreement").attr("checked"))
        {
            alert("You must agree to our terms and conditions.");
            return false;
        }
        return true;
    });
});
```

```
function quote()
{
    // instantiate XMLHttpRequest object
    try
    {
        xhr = new XMLHttpRequest();
    }
    catch (e)
    {
        xhr = new ActiveXObject("Microsoft.XMLHTTP");
    }

    // handle old browsers
    if (xhr == null)
    {
        alert("Ajax not supported by your browser!");
        return;
    }

    // construct URL
    var url = "quote1.php?symbol=" + document.getElementById("symbol").value;

    // get quote
    xhr.onreadystatechange = handler;
    xhr.open("GET", url, true);
    xhr.send(null);
}
```

```
$(document).ready(function() {
    $("#form").submit(function() {
        $.ajax({
            url: "quote3.php",
            data: {
                symbol: $("#symbol").val()
            },
            success: function(data) {
                $("#price").html(data.price);
                $("#high").html(data.high);
                $("#low").html(data.low);
            }
        });
        return false;
    });
});
```

```
<?
    // require common code
    require_once("includes/common.php");

?>

<!DOCTYPE html>

<html>

    <head>
        <link href="css/styles.css" rel="stylesheet" type="text/css">
        <title>C$50 Finance: Home</title>
    </head>

    <body>

        <div id="top">
            <a href="index.php"></a>
        </div>

        <div id="middle">
            
        </div>

        <div id="bottom">
            <a href="logout.php">log out</a>
        </div>

    </body>

</html>
```

```
// prepare point
var point = earth.createPoint("");
point.setAltitudeMode(earth.ALTITUDE_RELATIVE_TO_GROUND);
point.setLatitude(building.lat);
point.setLongitude(building.lng);
point.setAltitude(2.0);
```

```
// add marker to map
var marker = new google.maps.Marker({
  icon: "http://maps.gstatic.com/intl/en_us/mapfiles/ms/micons/man.png",
  map: map,
  position: new google.maps.LatLng(building.lat, building.lng),
  title: PASSENGERS[i].name + " at " + building.name
});
```



# staff

Tommy, Rob

Chris, Chris, Larry, Matt, Mike, Tom, Wellie

abstraction, encapsulation

classes, prototypes, objects

inheritance, polymorphism

interfaces

# design patterns

singletons, factories, observers, ...

# unit testing

PHPUnit, Selenium, ...

UX



# performance

latency, caching, ...

# source control

git, subversion

# IDEs

Xcode, ...

# PHP frameworks

CodeIgniter

# JavaScript libraries

jQuery, jQuery Mobile  
node.js, socket.io

...



SDKs



Carrier

5:00 AM

hello, world



lectures

# 4 projects

web app (staff's choice)  
web app (students' choice)  
native app (staff's choice)  
native app (students' choice)

# release cycle

<b>week</b>	<b>Mon</b>	<b>Tue</b>	<b>Wed</b>	<b>Thu</b>	<b>Fri</b>
1			proposal		
2	design document style guide				beta
3			code reviews		
4	release				

partners

academic honesty

labs

# Macs

from Mon 3/19 onward

iPads, iPhones, iPods



books

ANNIVERSARY EDITION WITH FOUR NEW CHAPTERS



ESSAYS ON SOFTWARE ENGINEERING

THE  
MYTHICAL  
MAN-MONTH

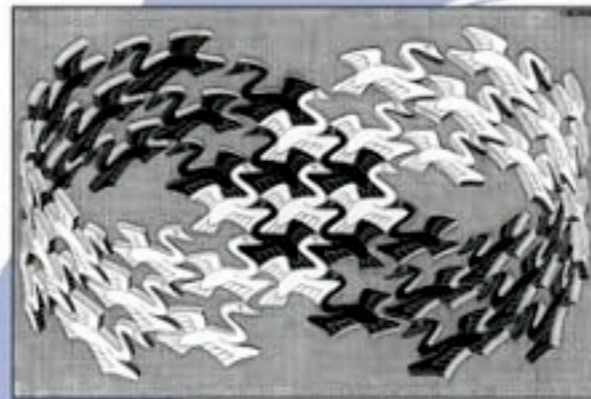
FREDERICK P. BROOKS, JR.

FREDERICK P. BROOKS, JR.

# Design Patterns

Elements of Reusable  
Object-Oriented Software

Erich Gamma  
Richard Helm  
Ralph Johnson  
John Vlissides



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Foreword by Grady Booch

ADDISON-WESLEY PROFESSIONAL COMPUTING SERIES






# PHP

## IN ACTION

Objects, Design, Agility

Dagfinn Reiersøl  
Marcus Baker  
Chris Shiflett

 MANNING

 MANNING

THE EXPERT'S VOICE® IN WEB DEVELOPMENT

# Pro JavaScript™ Design Patterns

*The essentials of object-oriented  
JavaScript™ programming*

Ross Harmes and Dustin Diaz

apress®

apress®

Stephen G. Kochan



Updated  
for iOS 5  
and ARC

# Programming in Objective-C

Fourth Edition

**Developer's Library**



Wrox Programmer to Programmer™



UPDATED FOR iOS 5



Beginning

# iOS 5

## Application Development

IN FULL COLOR

Wei-Meng Lee

WEI-MENG LEE

IN FULL COLOR

Steve Krug

UPDATED  
with three  
new chapters!

# DON'T MAKE ME

**THINK**



A Common Sense Approach to Web Usability

**SECOND EDITION**

**SECOND EDITION**

A Common Sense Approach to Web Usability



# SEAS Design Fair

Tue 5/1

[cs164.net/lottery](http://cs164.net/lottery)

to be continued...