
Become a Professional Developer

CS356 Object-Oriented Design and Programming

<http://cs356.yusun.io>

December 3, 2014

Yu Sun, Ph.D.

<http://yusun.io>

yusun@csupomona.edu



CAL POLY POMONA

Technical



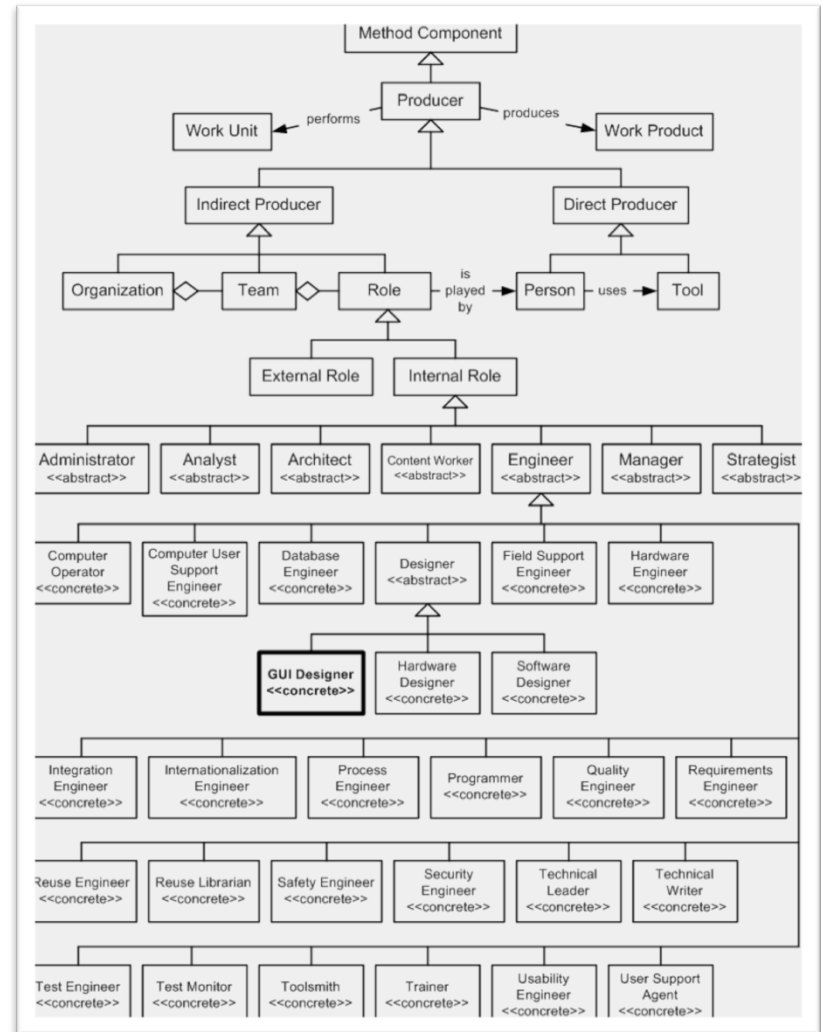
Complex but Clear Interface/Inheritance



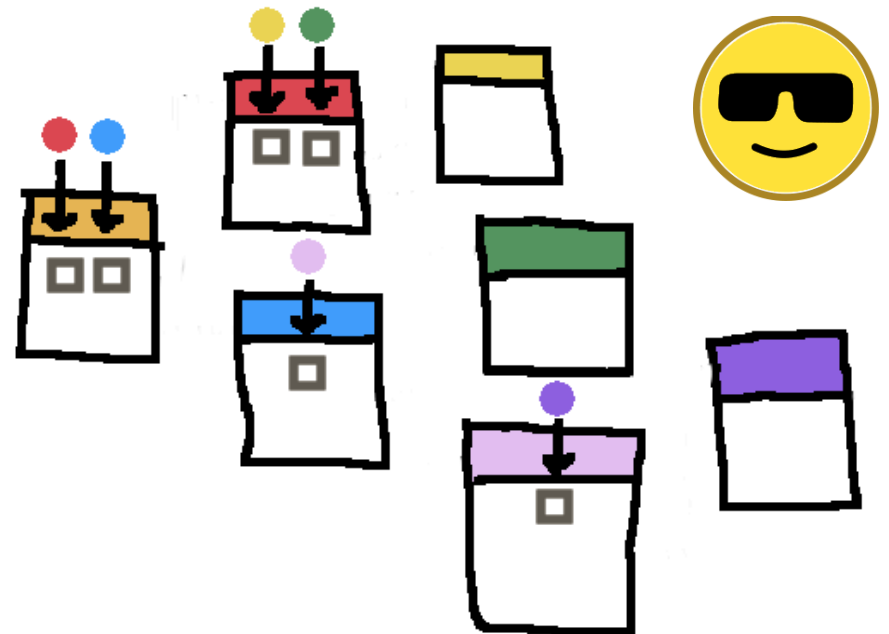
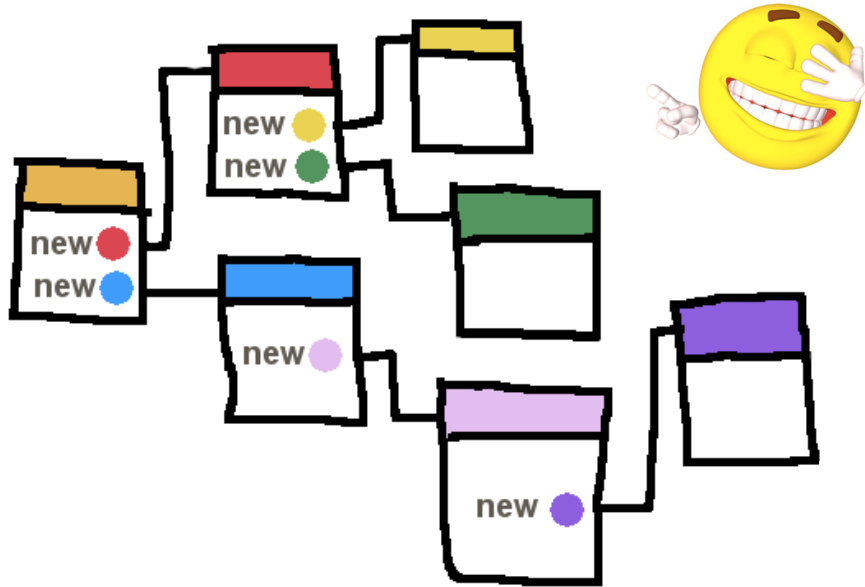
```
class Convertible {  
  // Key (private)  
  // Speed : 155 (miles / hour)  
  // Weight 1600 kg  
  // Engine : 3.2 L S54 inline-6  
}
```



```
class Roadster extends Convertible {  
  // Speed : 165 (miles / hour)  
  // Weight 1399 kg  
}
```



Use Dependency Injection



Write More Comments than Code

```
using (var sr = File.OpenText(filename))
{
    var reader = new JsonTextReader(sr);
    var sb = new StringBuilder();
    while (reader.Read())
    {
        switch (reader.TokenType)
        {
            case JsonToken.PropertyName:
                sb.AppendFormat("\t\t\t\t\t{0} = ", reader.Value);
                break;
            case JsonToken.Null:
                sb.Append("null," + Environment.NewLine);
                break;
            case JsonToken.Integer:
            case JsonToken.Float:
                sb.Append(reader.Value + "," + Environment.NewLine);
                break;
            case JsonToken.Boolean:
                sb.Append(reader.Value.ToString().ToLower() + "," + Environment.NewLine);
                break;
            case JsonToken.Date:
                var dt = DateTime.Parse(reader.Value.ToString());
                if (dt == DateTime.MinValue)
                    sb.AppendFormat("System.DateTime.MinValue," + Environment.NewLine);
                else if (dt == DateTime.MaxValue)
                    sb.AppendFormat("System.DateTime.MaxValue," + Environment.NewLine);
                else
                    sb.AppendFormat("new System.DateTime({0},{1},{2},{3},{4},{5},{6}",
                        dt.Year, dt.Month, dt.Day, dt.Hour, dt.Minute,
                        dt.Second, Environment.NewLine);
                break;
            case JsonToken.String:
                sb.AppendFormat("{0}{1}{0},{2}", reader.QuoteChar.ToString(),
                    reader.Value, Environment.NewLine);
                break;
        }
    }
    Write(sb.ToString().Substring(0, sb.Length - ("," + Environment.NewLine).Length));
}
```



```
void OnContentControlMouseDown(
    object sender, RoutedEventArgs e )
{
    // Create a resource key which specifies that we want to
    // get the DataTemplate with no x:Key and the DataType
    // property is set to the Type object for our Foo class.
    DataTemplateKey key = new DataTemplateKey( typeof(Foo) );

    // Query the resource system for the Foo DataTemplate.
    DataTemplate fooTemplate =
        base.FindResource( key ) as DataTemplate;

    ContentControl contentCtrl = e.Source as ContentControl;

    // This code assumes that the ContentControl
    // has not been given a new ControlTemplate.
    // By default a ContentControl's first child
    // element is a ContentPresenter. If the
    // ContentControl's Template has been given
    // a new value, all bets are off.
    ContentPresenter contentPresenter =
        VisualTreeHelper.GetChild( contentCtrl, 0 )
        as ContentPresenter;

    // Search for the template's StackPanel named "stack"
    // within the ContentPresenter's visual tree. We need
    // to start the search with the ContentPresenter because
    // that is the templated element, not the ContentControl.
    StackPanel stack =
        fooTemplate.FindName( "stack", contentPresenter )
        as StackPanel;

    // Toggle the StackPanel's orientation setting.
    stack.Orientation =
        stack.Orientation == Orientation.Horizontal ?
        Orientation.Vertical :
        Orientation.Horizontal;
}
```



Perfect Indentation

```
<ul id="bigBarNavigation">
<li><a href="/">HOME</a>
  </li><li><a href="/contact">CONTACT US</a></li><li>
    <a href="/about">ABOUT US</a></li></ul>
```

Confusing mess...



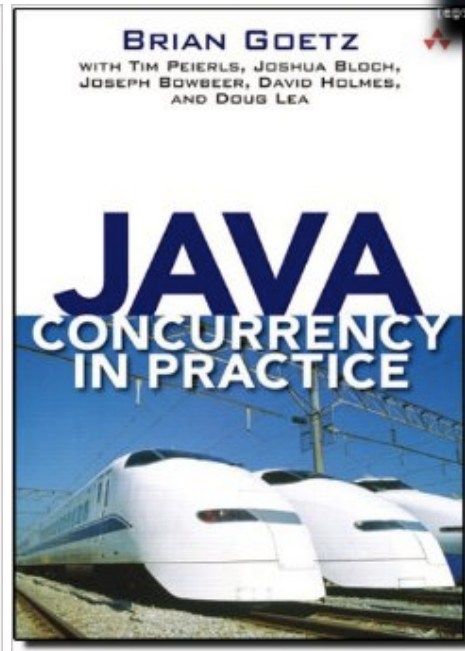
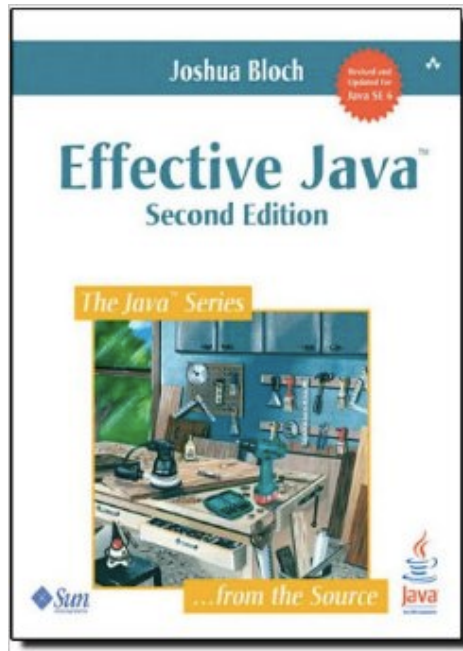
```
<ul id="bigBarNavigation">
  <li><a href="/">HOME</a></li>
  <li><a href="/contact">CONTACT US</a></li>
  <li>
    <a href="/about">ABOUT US</a>
    <div class="subMenu">
      <!-- Just an example to
           show indentation -->
    </div>
  </li>
</ul>
```

Nice and clean. mmmmmmmmm...



Be a Master of 1 or 2 Languages

- ◆ One standard OOP
 - ◆ Java / C++
- ◆ One scripting language
 - ◆ Python / Ruby





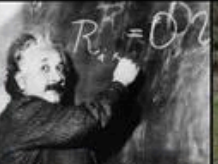











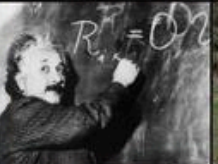





















Pick up New Languages Quickly

- ◆ Perl
- ◆ Bash
- ◆ Go
- ◆ HTML/CSS
- ◆ Javascript
- ◆ XML
- ◆ PHP
- ◆ ...



Knowing Languages is Trivial

Java	C	PHP	Ruby	Haskell	Lisp	as seen by...
						Java fans
						C fans
						PHP fans
						Ruby fans
						Haskell fans
						Lisp fans

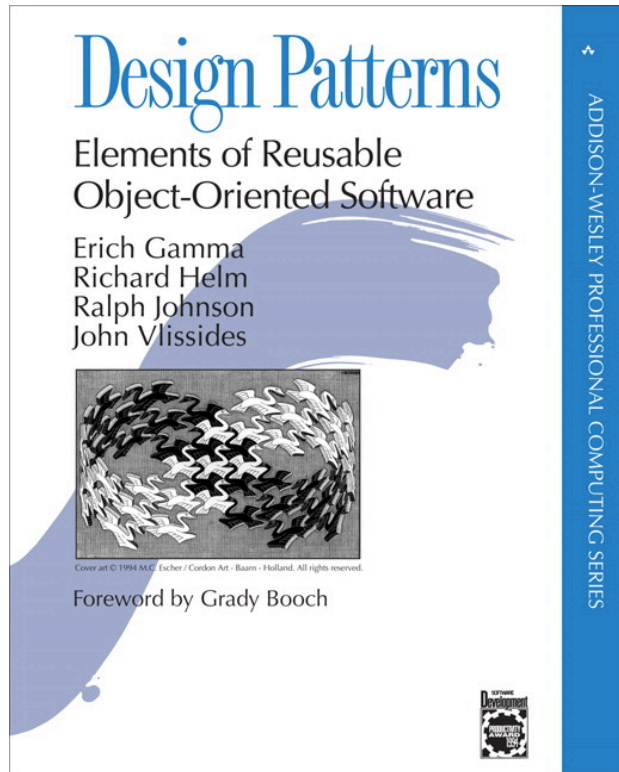
Professionals Focus on Problems



Professionals Focus on Users

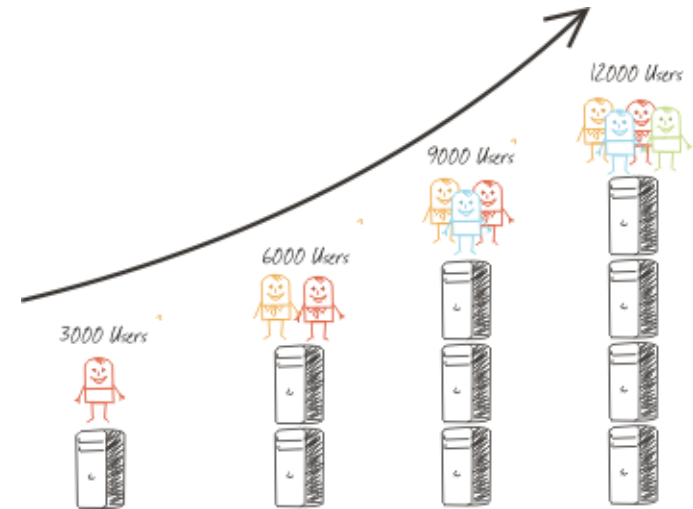


Professionals Focus on Extensibility

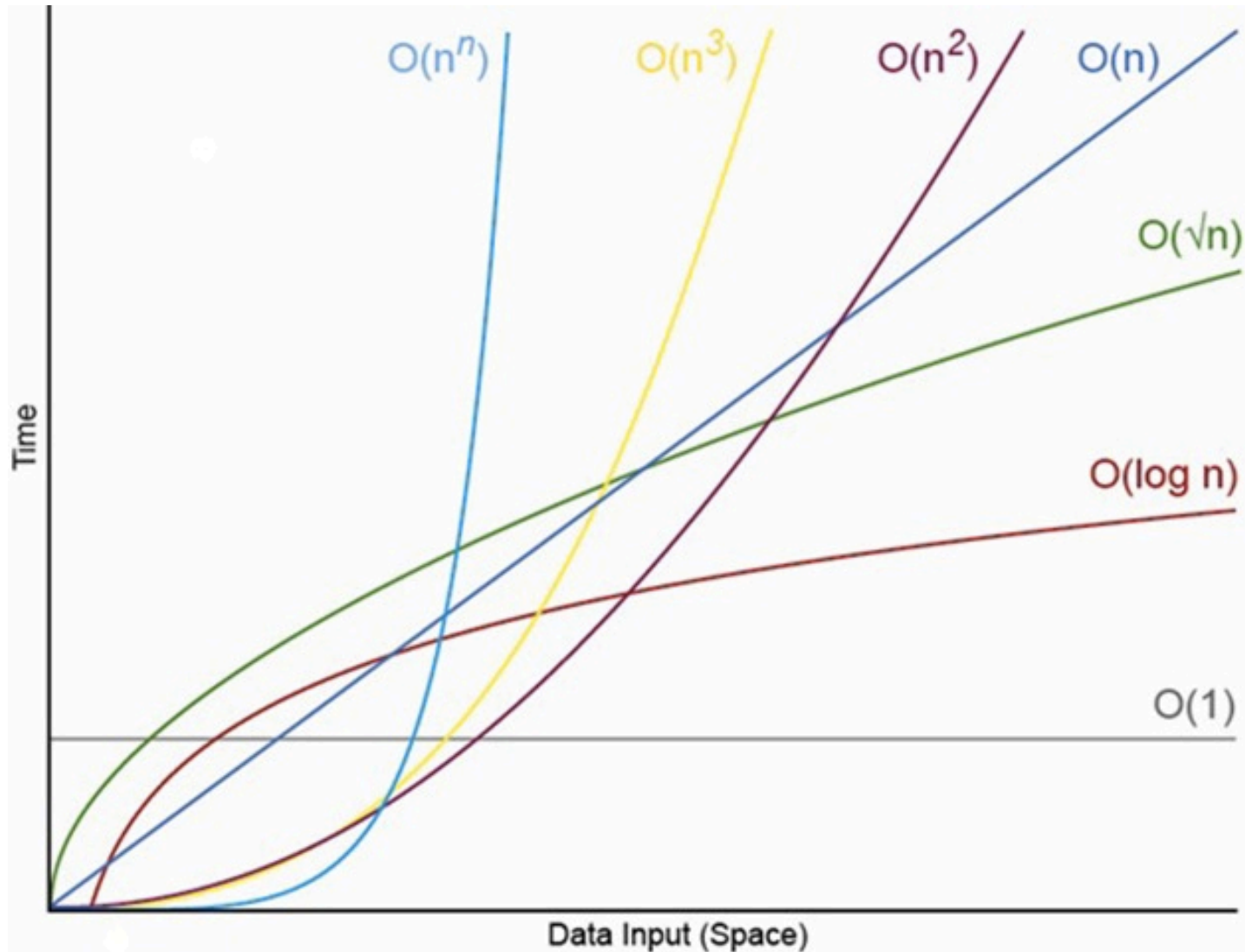


Professionals Focus on Scalability

- ◆ Minimizing work
- ◆ Paging through large datasets
- ◆ Avoiding datastore contention
- ◆ Sharding counters
- ◆ Effective memcache



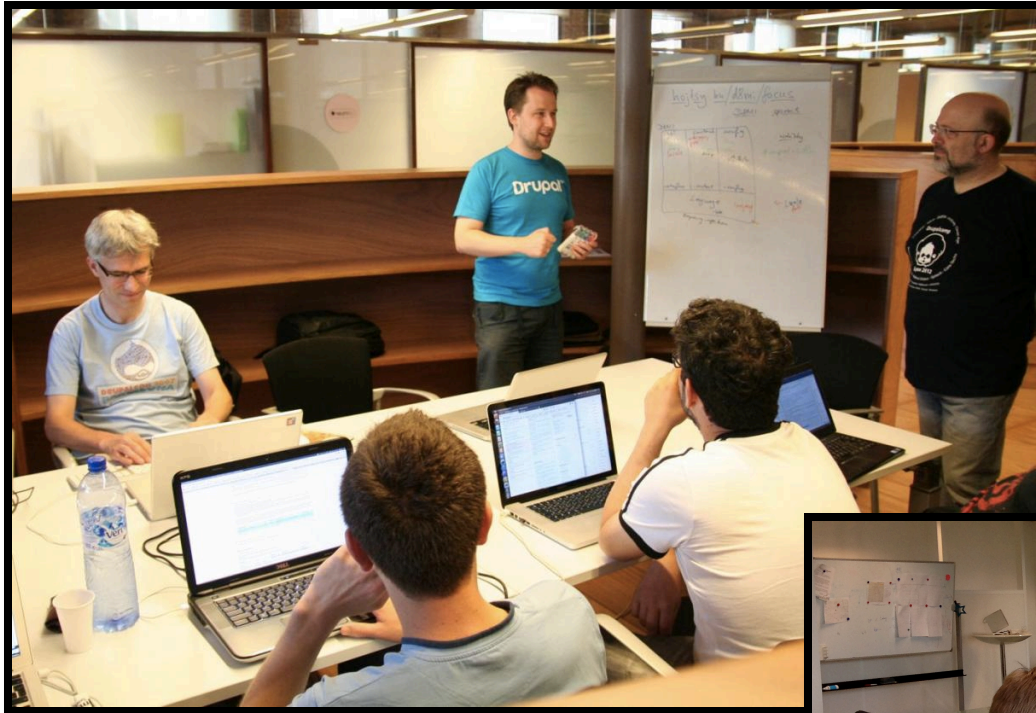
Professionals Focus on Efficiency



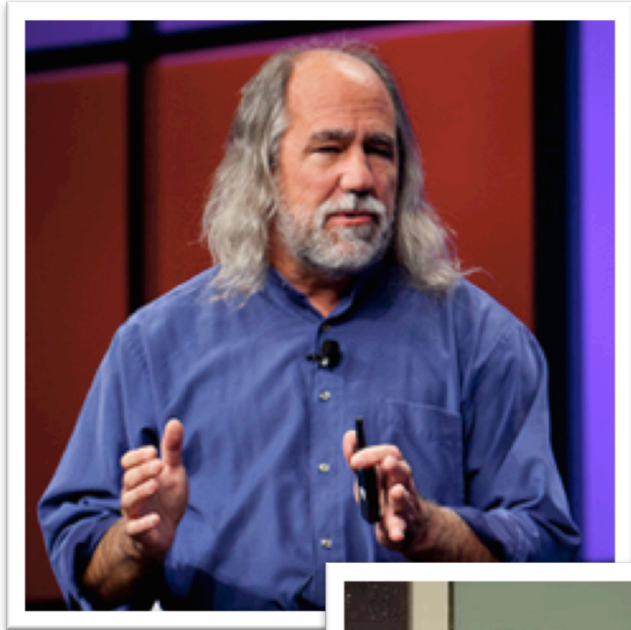
Non-Technical



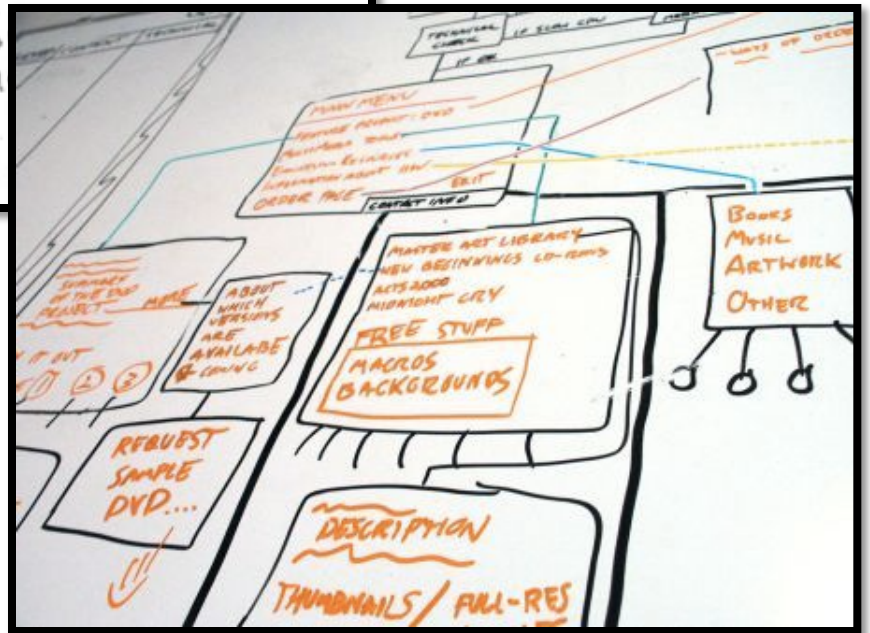
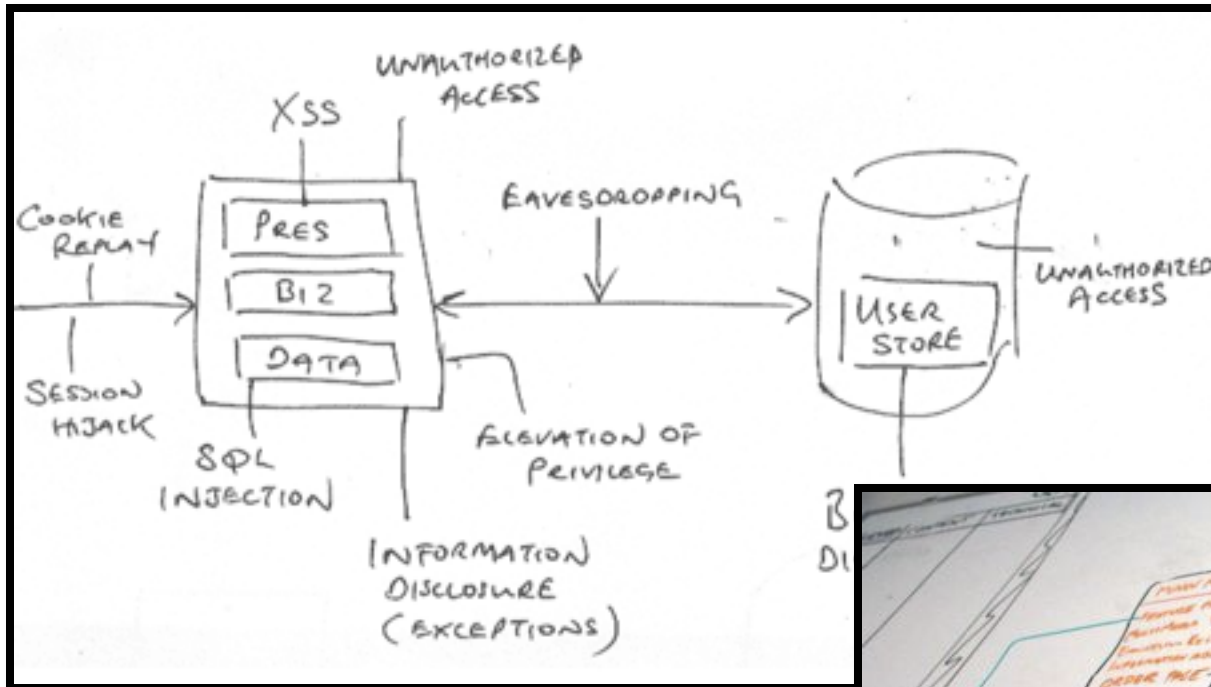
Communication Skill is Essential



Great Developers are Great Speakers



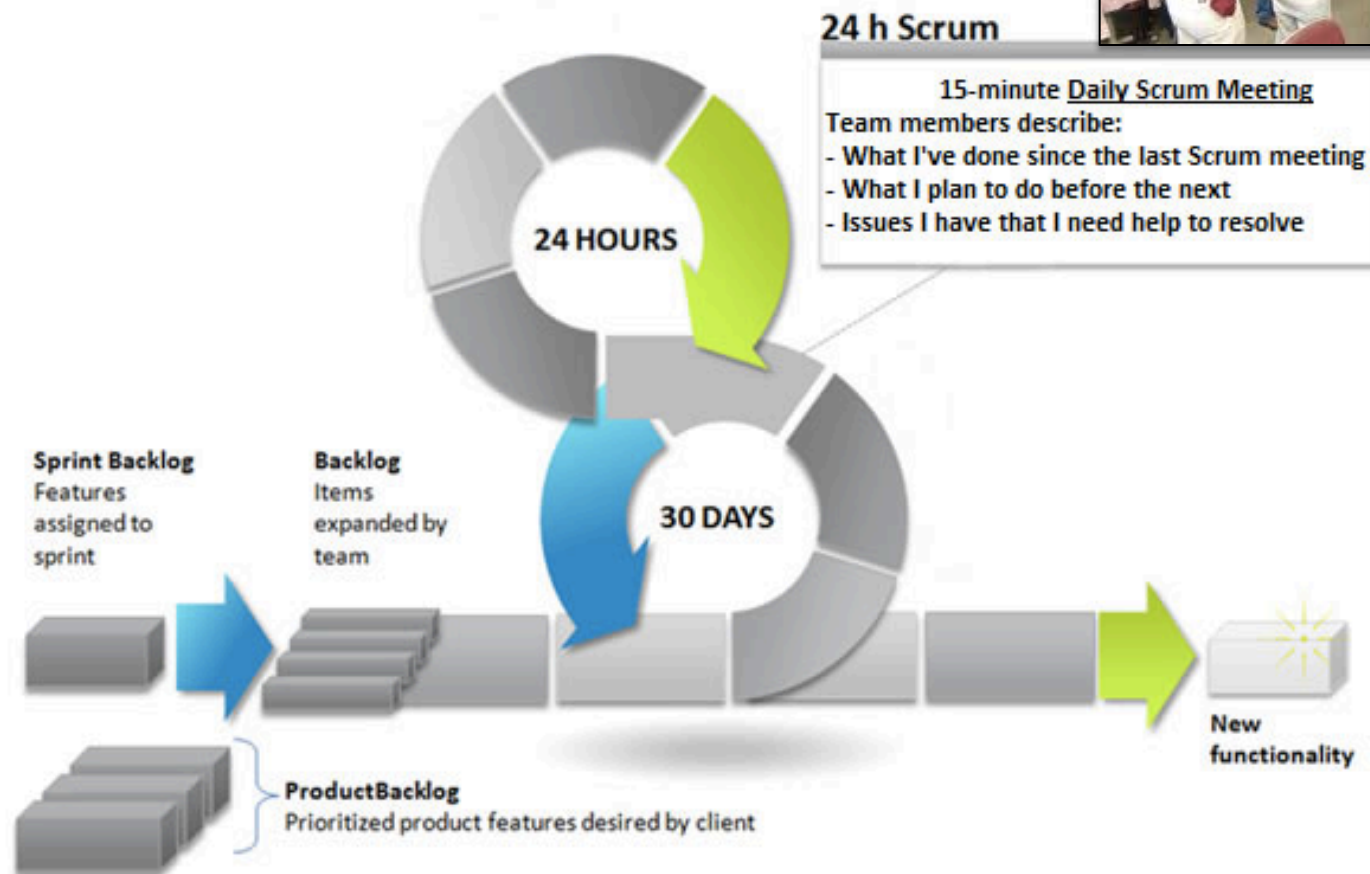
Be a Whiteboard Master



Learn Agile/Scrum



SCRUM PROCESS



Learn How to Give Update

- ◆ Important for your performance evaluation
- ◆ Be prepared
- ◆ Update not just results
- ◆ Update **process and plan!**



Be Patient As a Rookie

- ◆ Prepare the tough start
- ◆ Just do it
- ◆ Ask for help



Be Patient As a Rookie

- ◆ Don't give yourself pressure

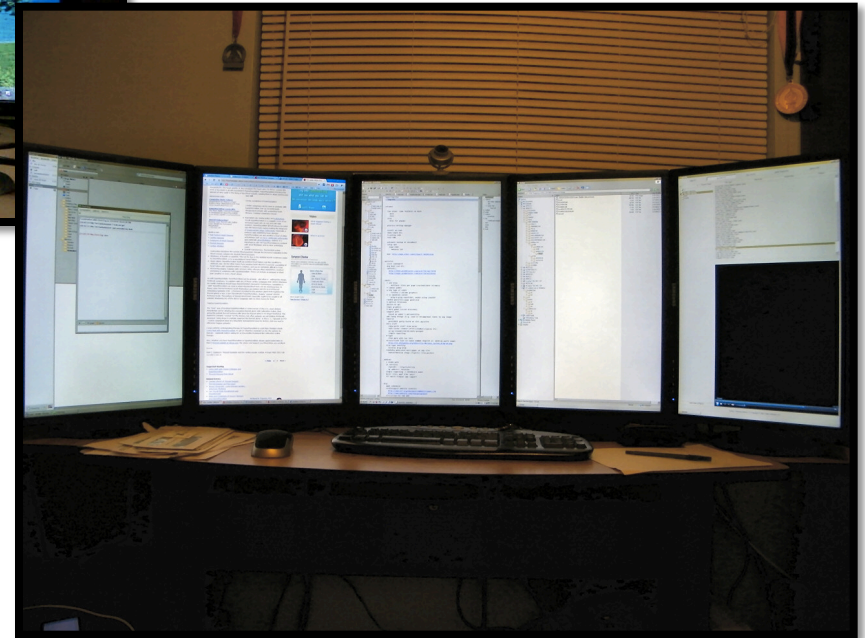
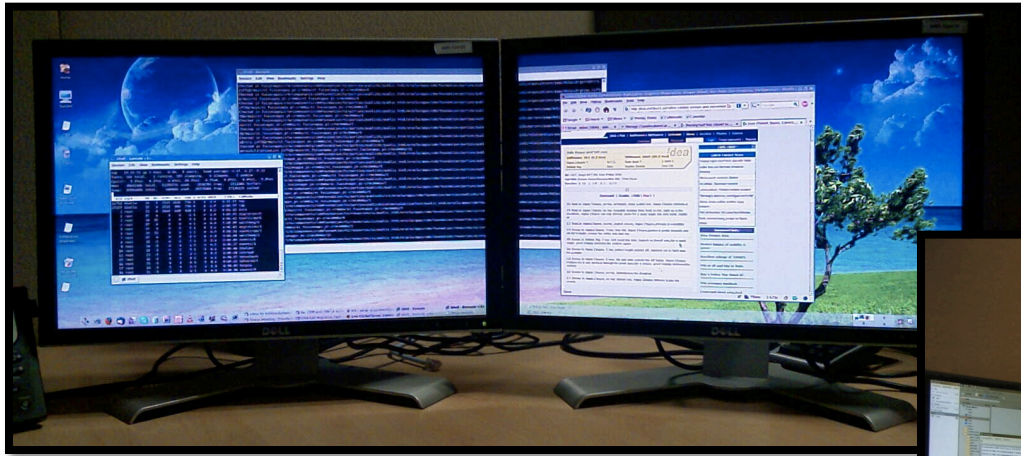


Don't be Lazy

- ◆ You are NOT wasting the company
- ◆ You are wasting your own career



Focus on the Important



Be Healthy



<https://www.youtube.com/watch?v=wJYGHDzmHY8>

Career & Plan



Passion is the Key

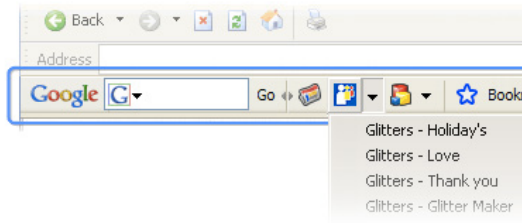
- ◆ If you don't like coding, there are a lot of alternatives:
 - ◆ Testing/QA
 - ◆ Operation
 - ◆ System Admin
 - ◆ DB Admin
 - ◆ Sales
 - ◆ Marketing
 - ◆ ...



Big High-Tech vs Startup



Team is Important



Boss is Important



Picking the right boss is far
more important than picking the
right job

Anonymous

Graduate Study

- ◆ Graduate degrees are valuable in the long term
 - ◆ More career choices
 - ◆ Diverse experiences
 - ◆ Specialized fields



What's the Important for NOW?



What's the Important for NOW?

- ◆ Interviews
- ◆ Algorithms



Recommended Resources

- ◆ <http://leetcode.com/>
- ◆ <http://www.careercup.com/>

