

Web Programming

YJ – Oct 2015

Course Outline

There're 16 lectures (5 hrs each) in this course. We'll mainly focus on web programming using LAMP model.

During the 24 hours tutorials in each week, our tutors will help you go through all the contents in the lecture notes and help you with the assignments

All scheduled lectures are learner-paced which means they could be altered depends on the situation. We help you gain rather than cram!

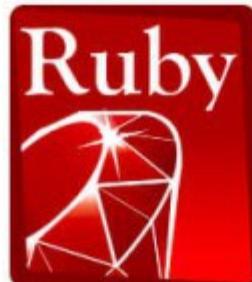
Web Programming Basic Review

- ❖ HTML Markup
- ❖ HTML DOM(Document Object Model)
- ❖ HTML5 new features
- ❖ CSS stylesheet
- ❖ Responsive CSS
- ❖ JavaScript basic
- ❖ Jquery
- ❖ PHP Basic

What is web programming?



Mainstream Languages



C#



C++



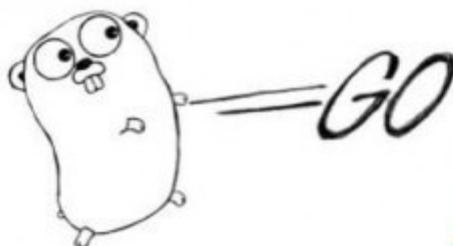
Objective-C



python



Perl

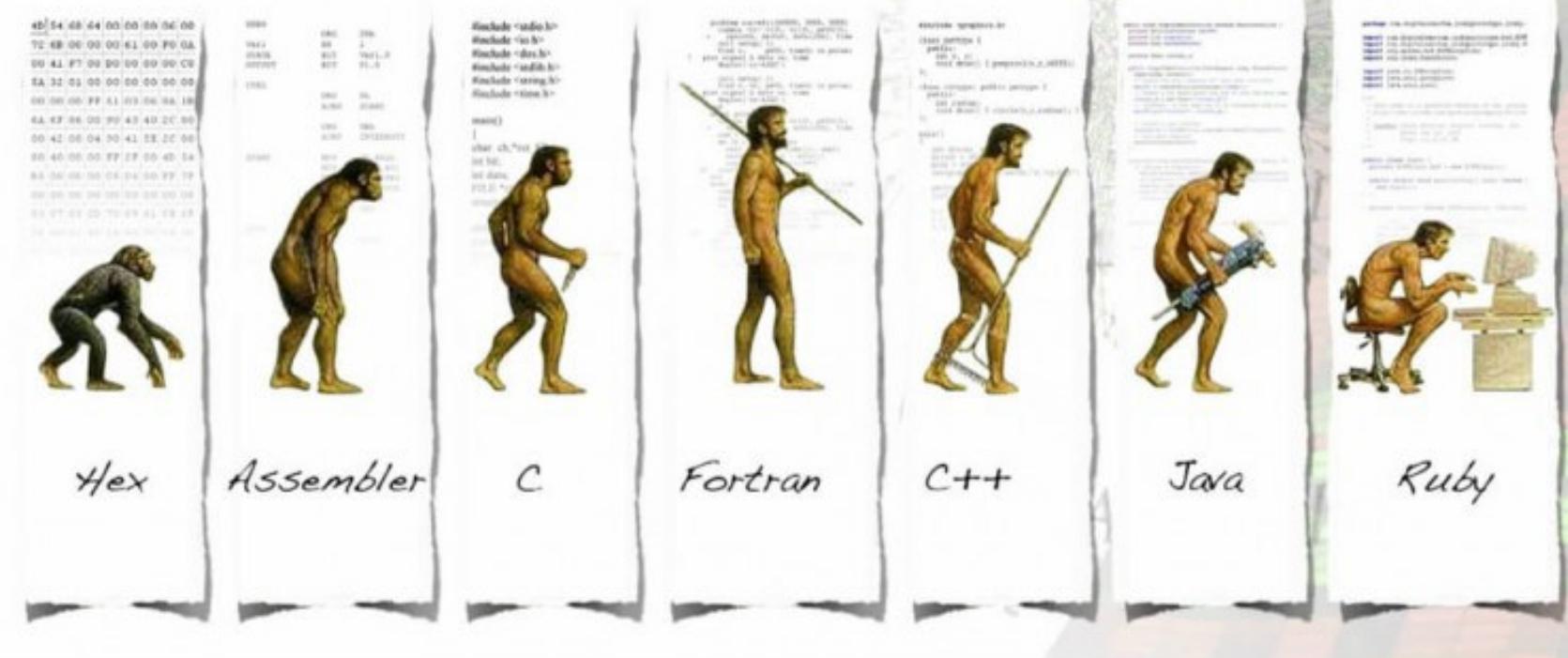


THE
C
PROGRAMMING
LANGUAGE



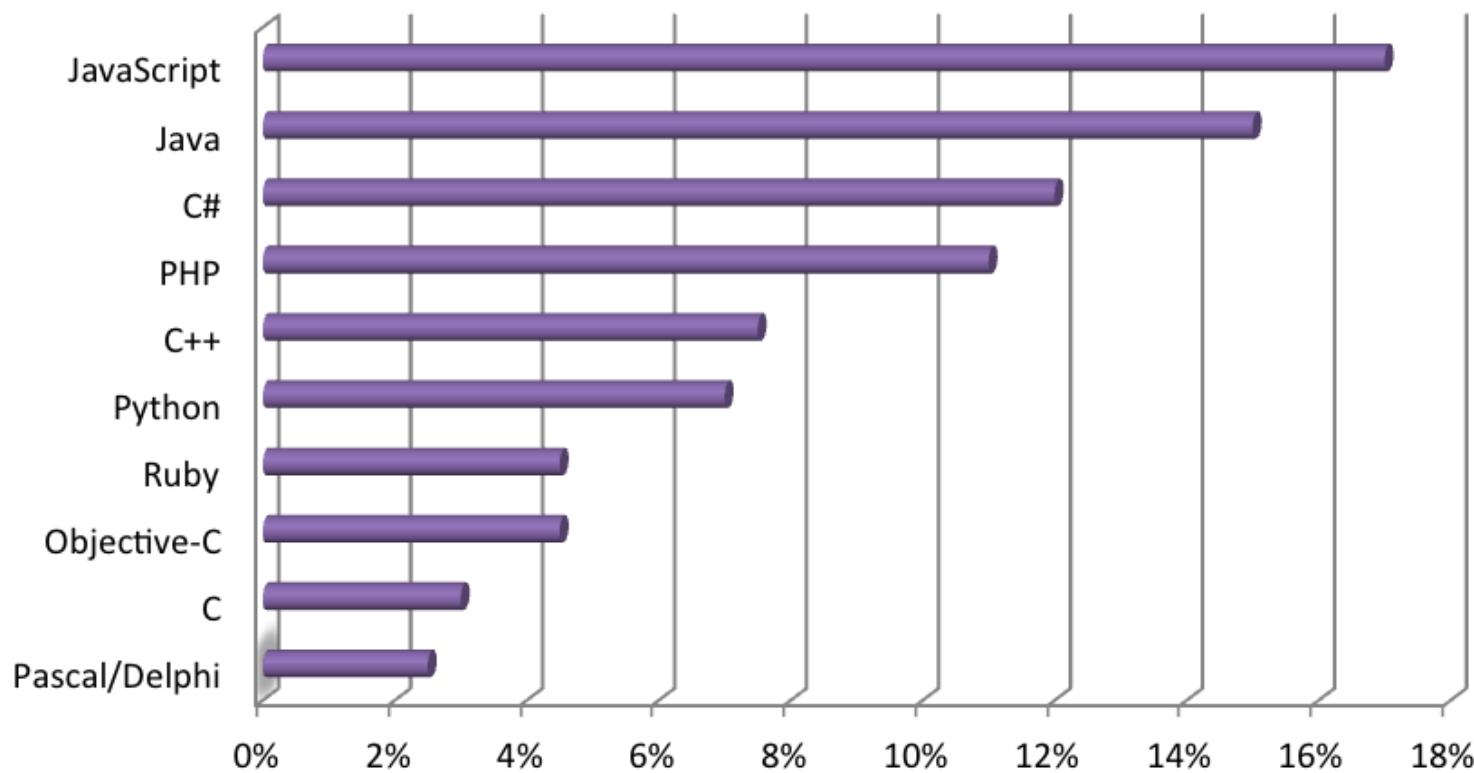
Mainstream Languages

The Evolution Of Computer Programming Languages

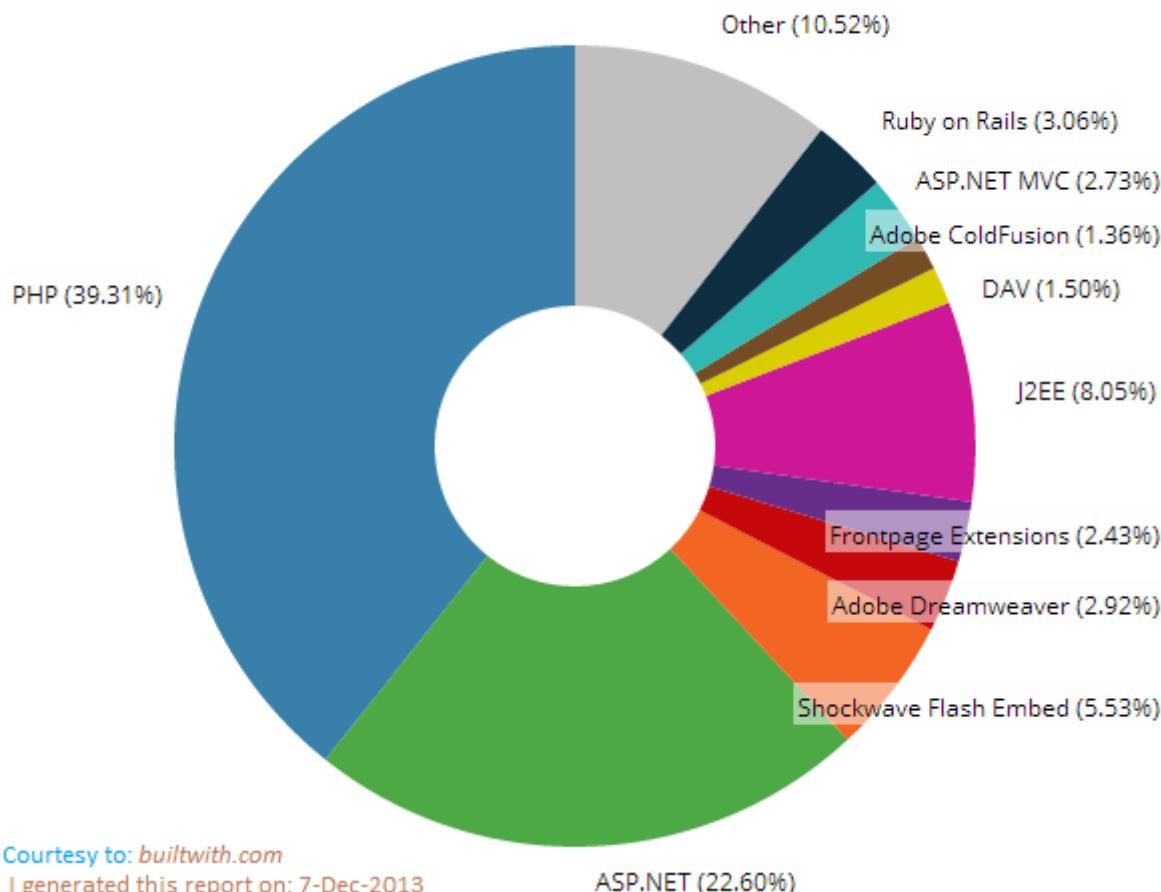


Mainstream Languages

Top 10 Programming Languages Developers Use For Their Pet Projects (Jan 2014)



Mainstream Languages



Why we learn web programming?

- ❖ Immigration
- ❖ Job
- ❖ Money
- ❖ Interest

Permanent Residency

261311 - Analyst Programmer

135111 - Chief Information Officer

263111 - Computer Network and Systems Engineer

262111 - Database Administrator

261312 - Developer Programmer

261111 - ICT Business Analysts

135199 - ICT Managers NEC

135112 - ICT Project Manager

263211 - ICT Quality Assurance Engineer

262112 - ICT Security Specialist

263299 - ICT Support and Test Engineer
NEC

26212 - ICT Support Engineer

26213 - ICT Systems Test Engineer

22311 – ICT Trainer

26111 - Multimedia Specialist

263112 - Network Administrator

263113 - Network Analyst

261399 - Software and Application
Programmer

261313 - Software Engineer

261314 - Software Tester

262113 - Systems Administrator

261112 - Systems Analysts

313113 - Web administrator

261212 - Web Developer

这些ACS提名的移民专业都需要编程技能

Job



Job Search \$150k+ Jobs Profile NEW

2,584 jobs matching your search criteria

Active filters: web developer × All Australia ×

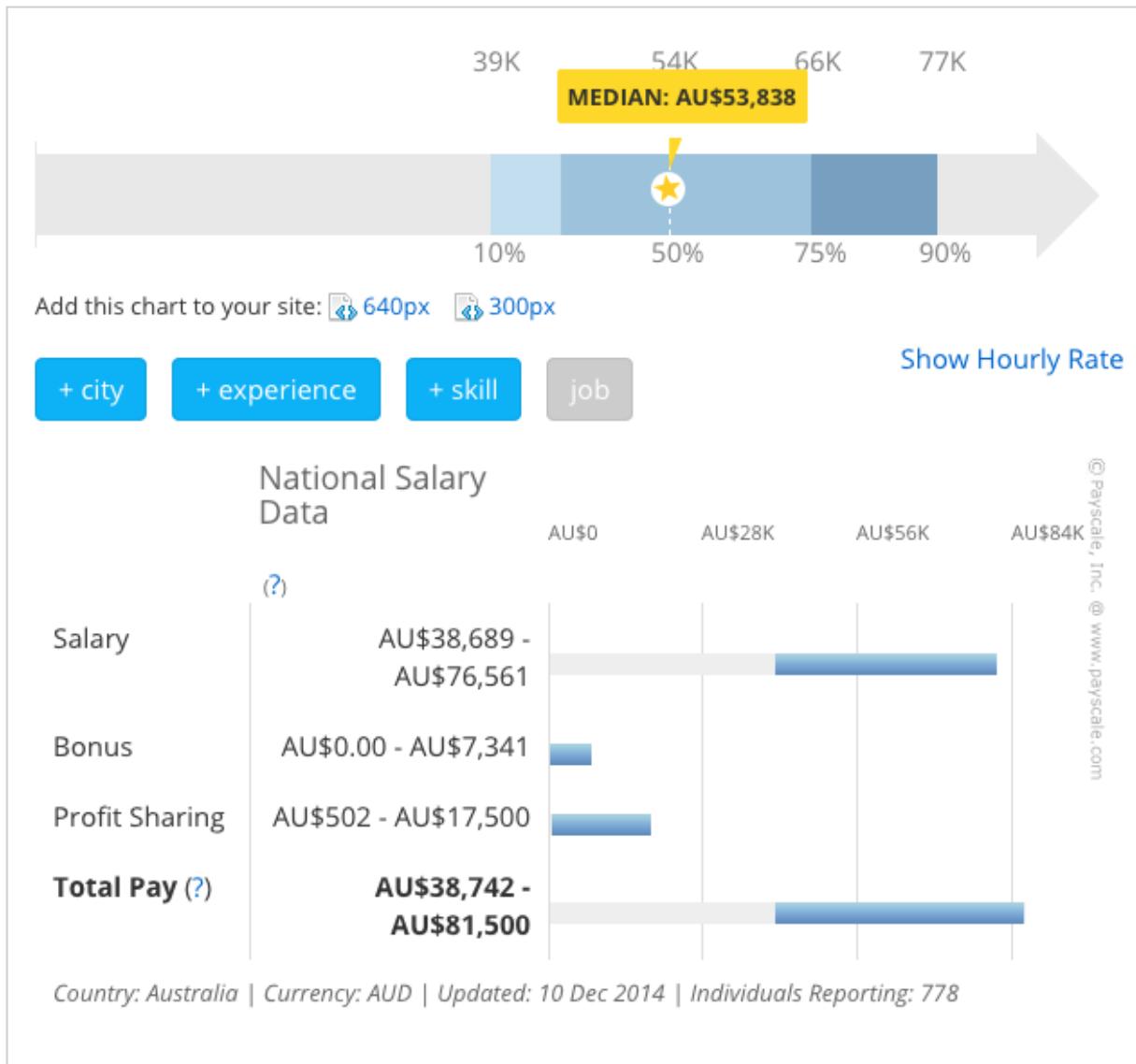
Job

Job Trends from Indeed.com

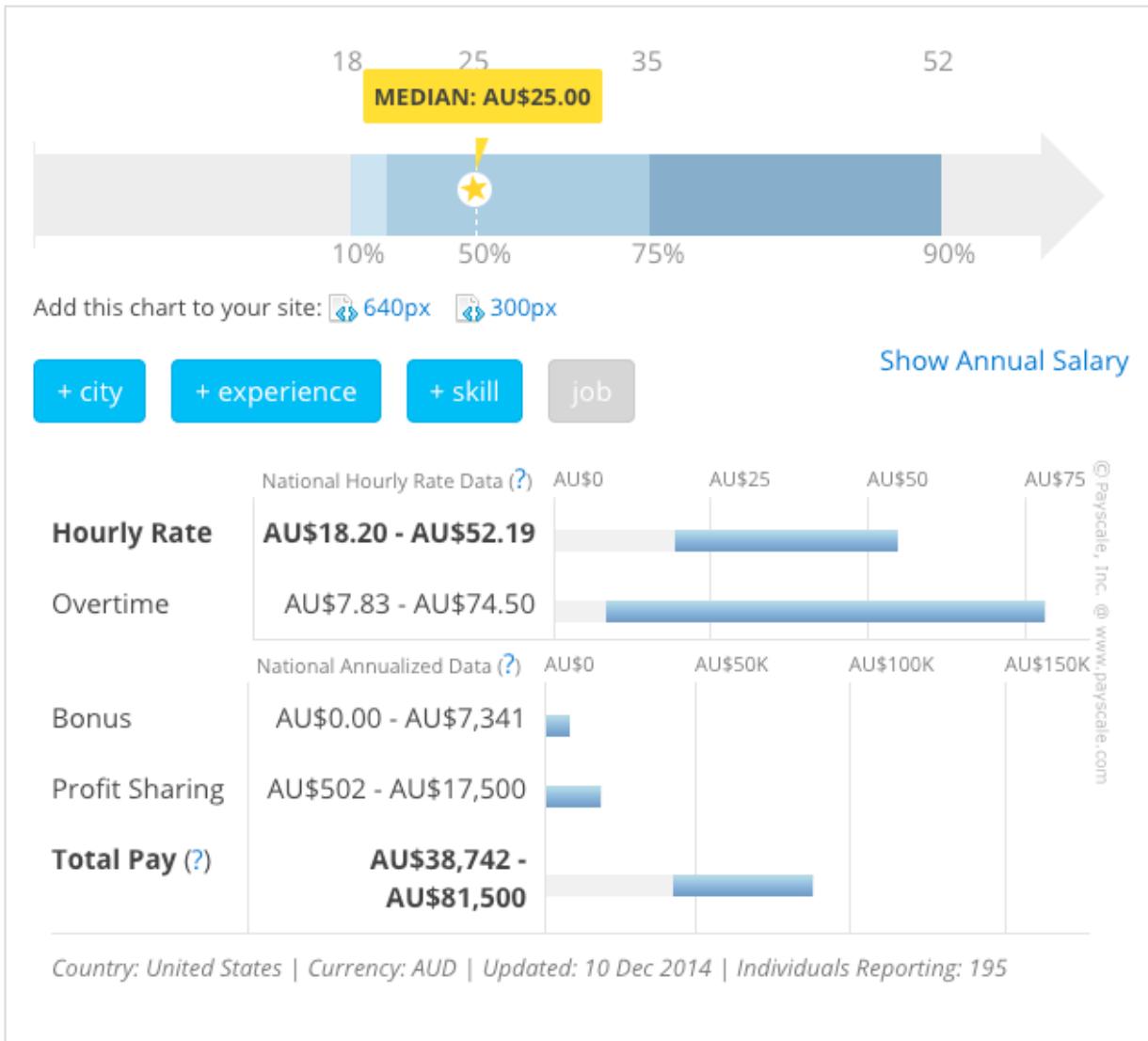
full stack web developer



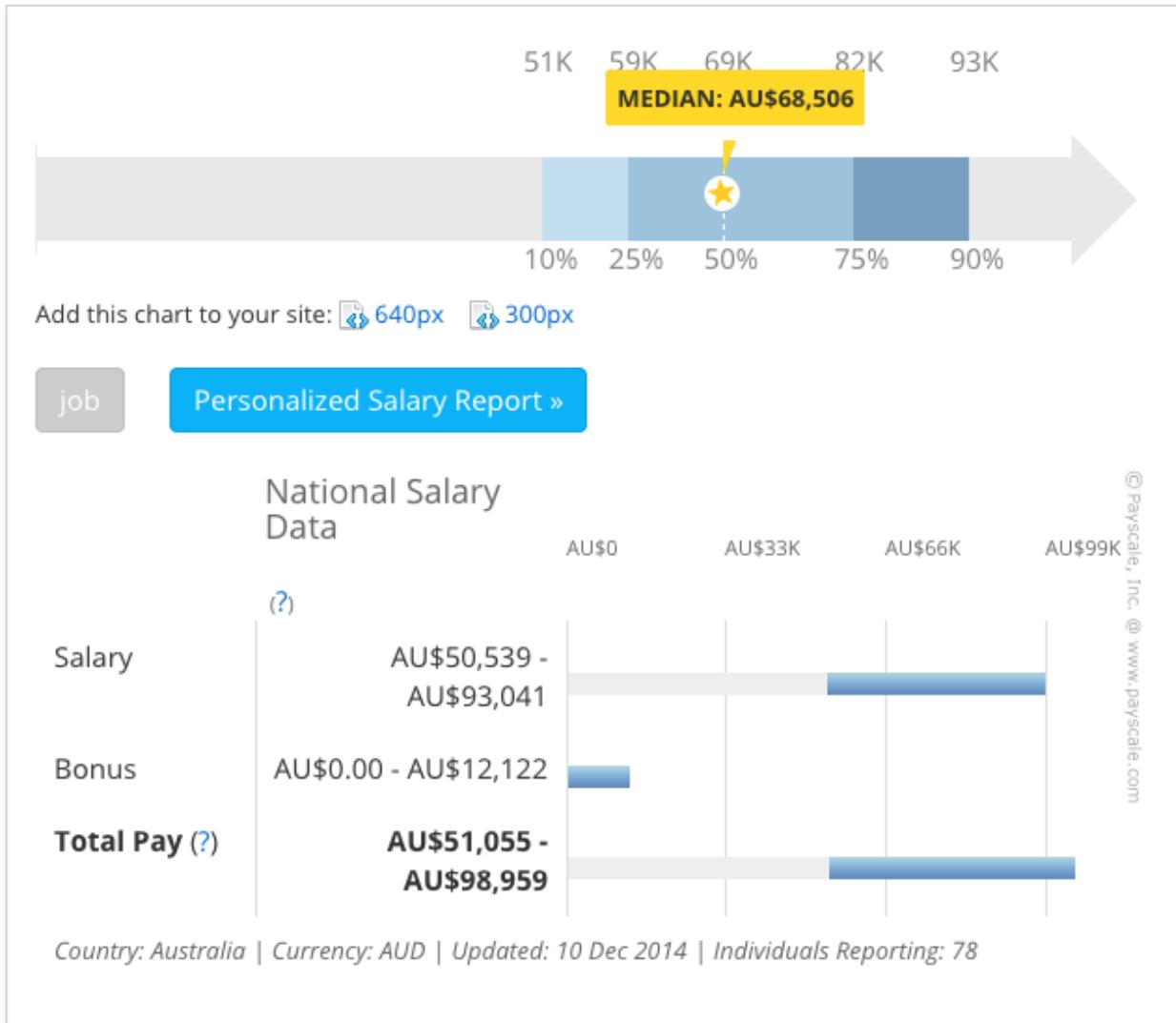
Money



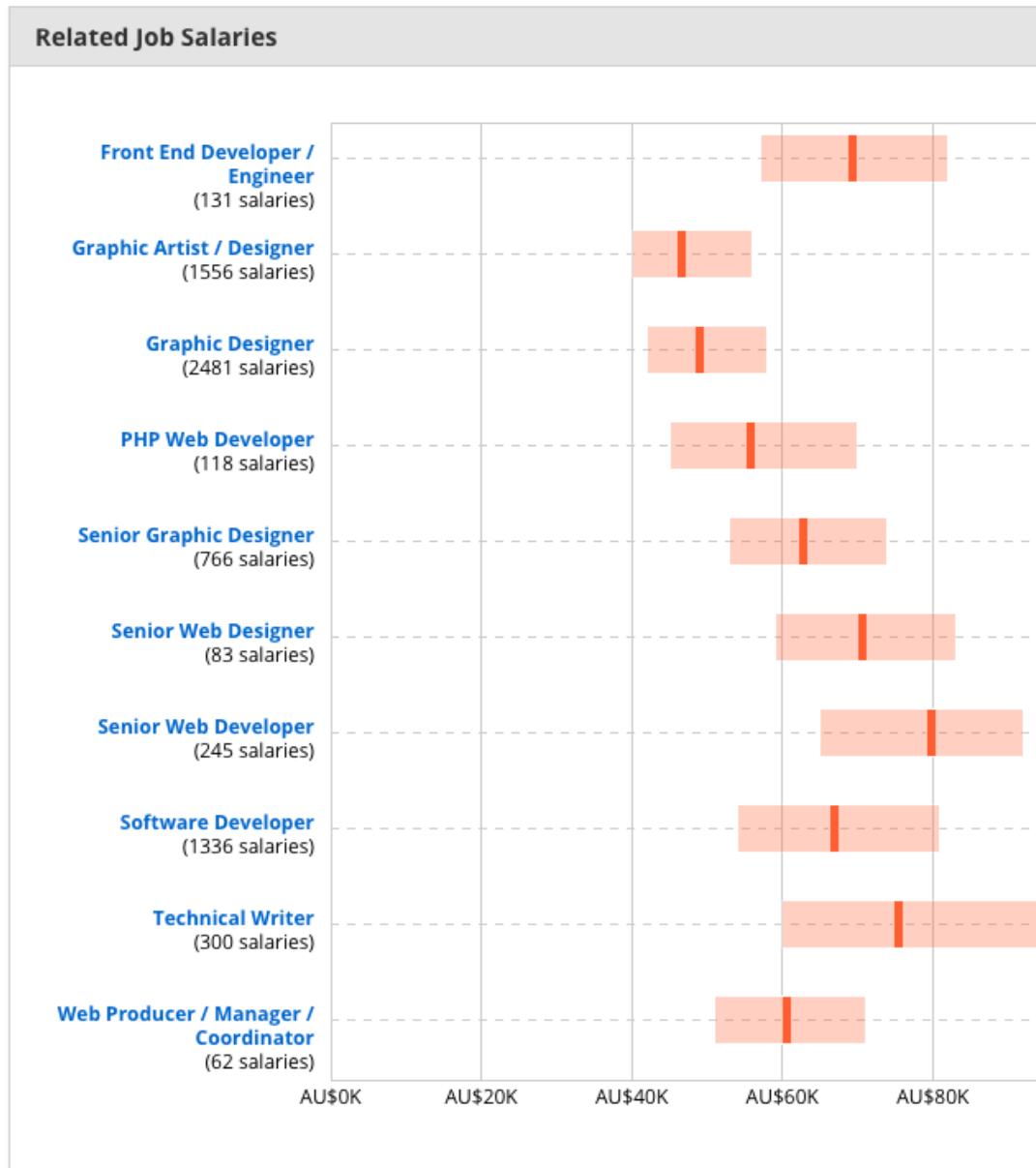
Money



Money



Money



How to learn?

Be Smart and Devoted

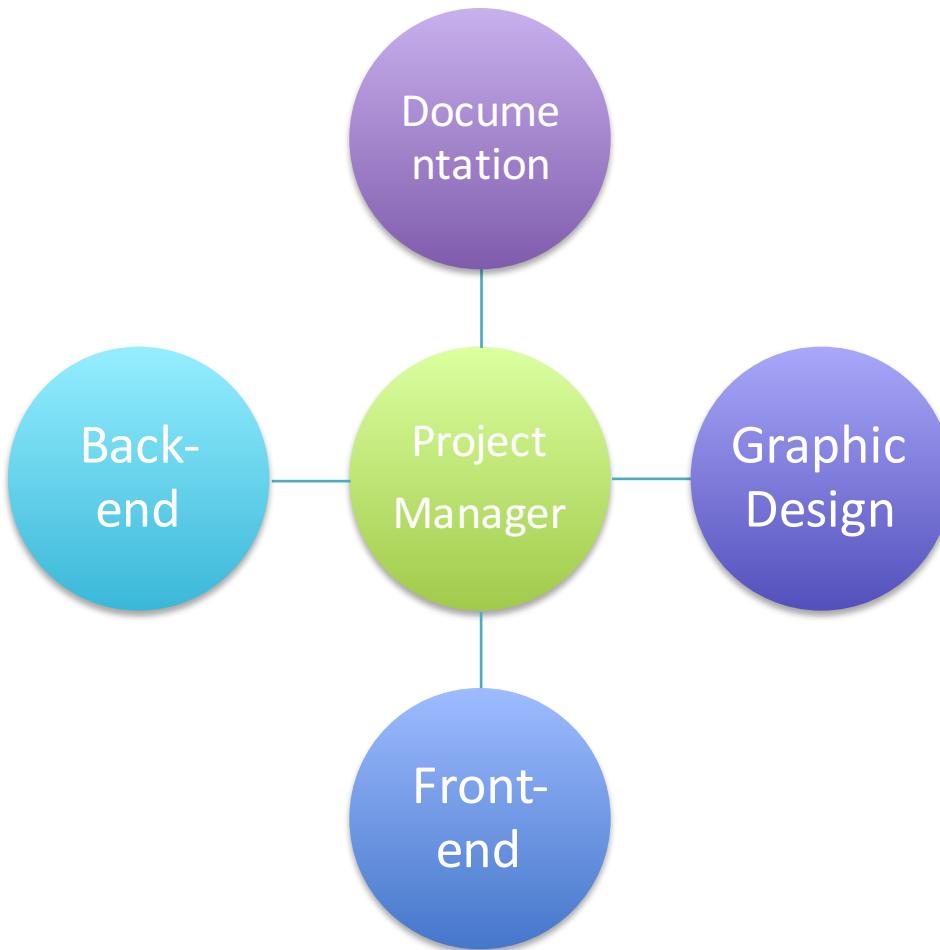
We will not take shortcut

This course will focus on fundamentals

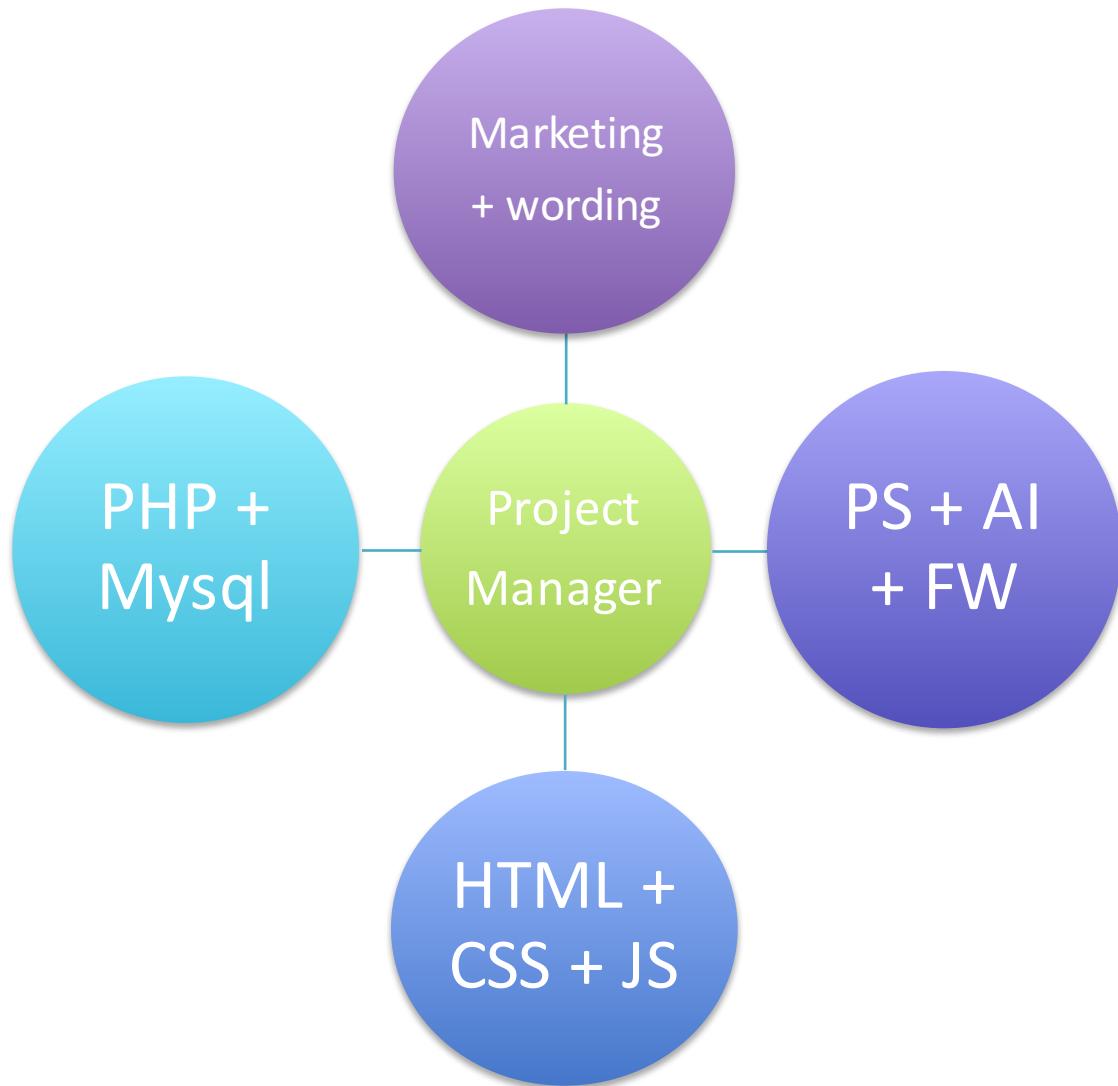
We will cover every phase of web development

You should learn broadly and focus on your interest

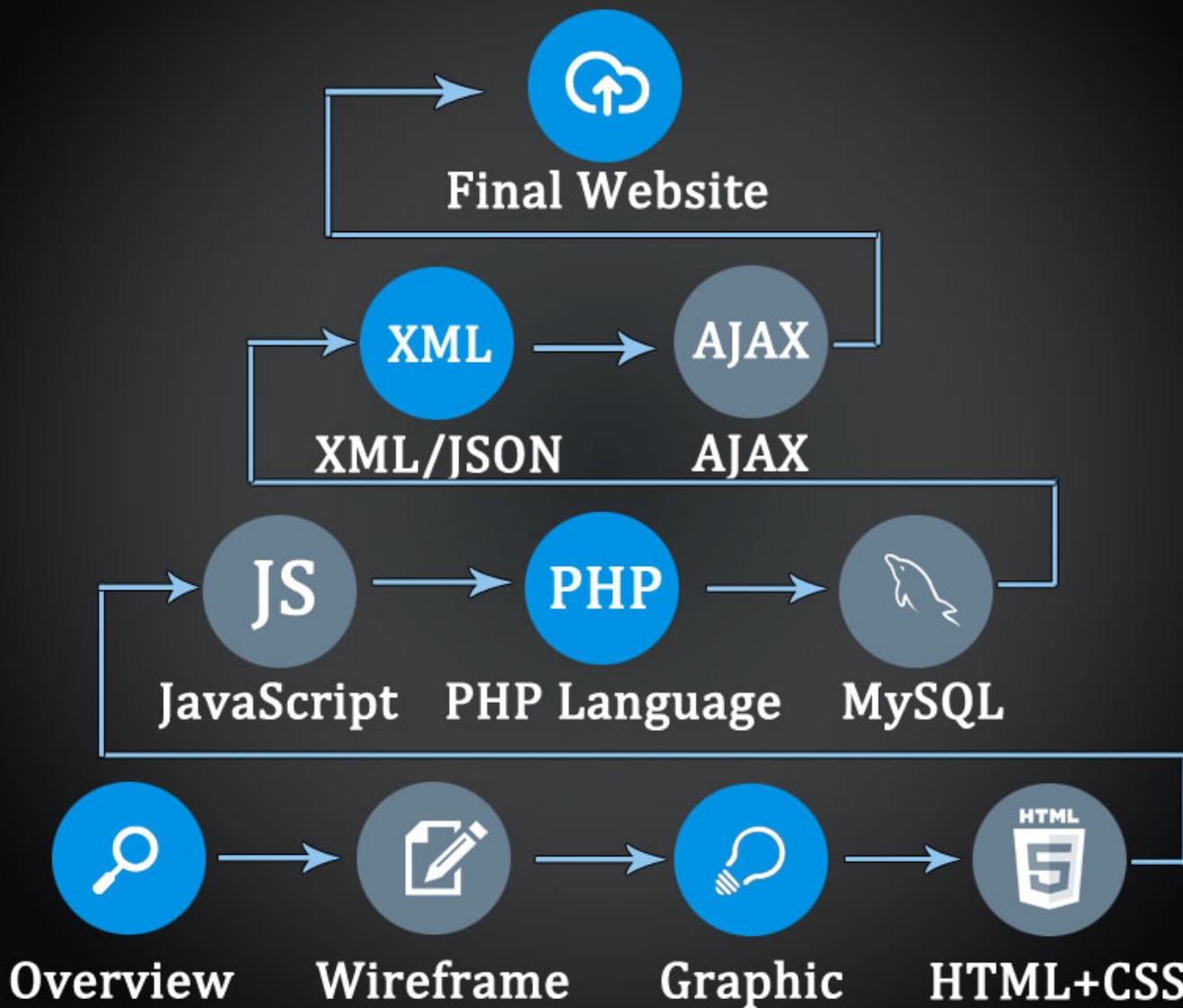
Work divisions



Skill requirements



Course Schedule



Develop Environment

LAMP

- ❖ Linux
- ❖ Apache
- ❖ MySQL
- ❖ PHP

WISA

- ❖ Windows
- ❖ IIS (Internet Information Server)
- ❖ SQL
- ❖ ASP

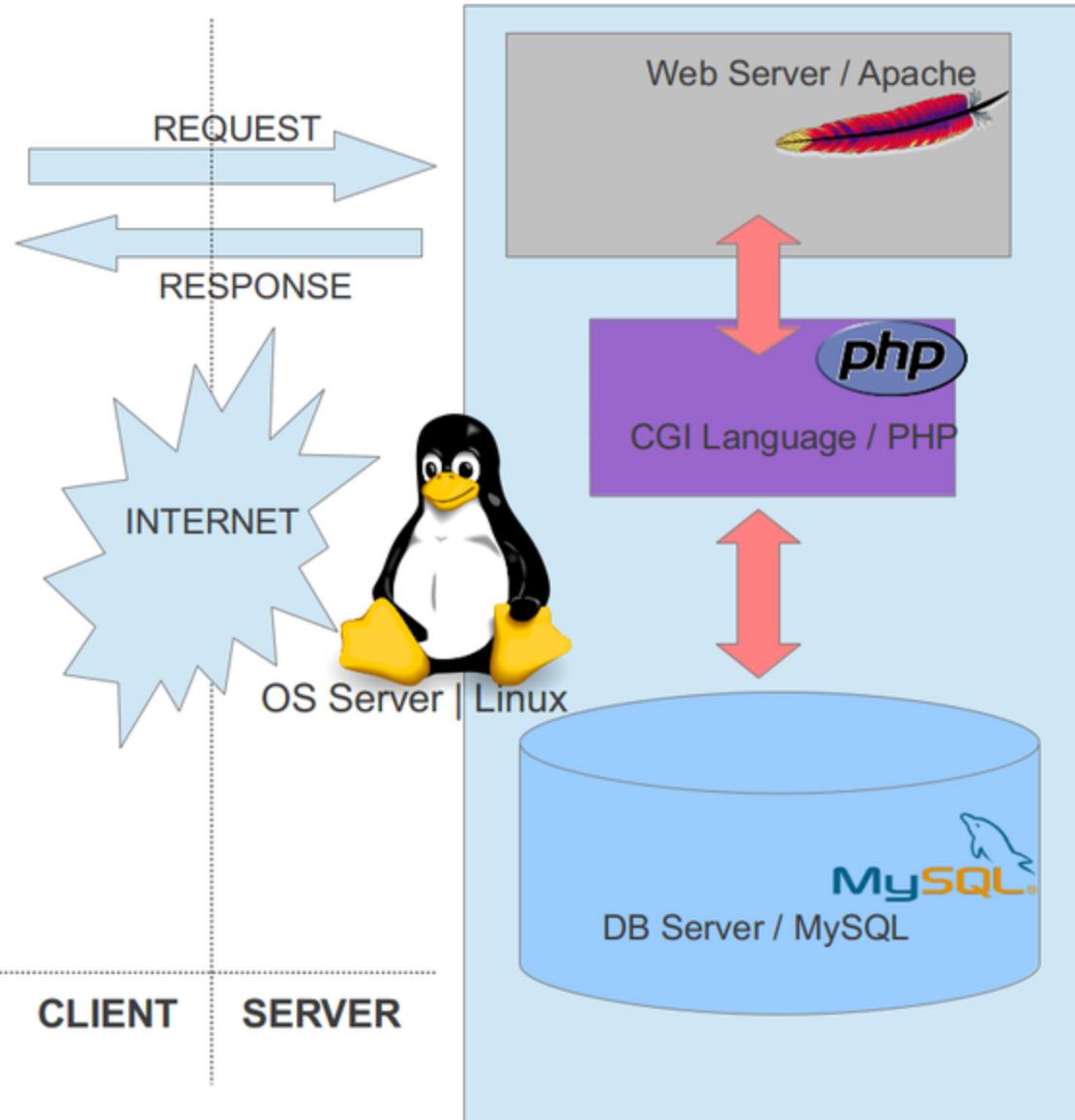
Develop Environment

Browser / Firefox



LAMP Architecture

- Linux - OS
- Apache - Web
- MySQL - DB
- PHP - Script



Develop Environment

MAMP



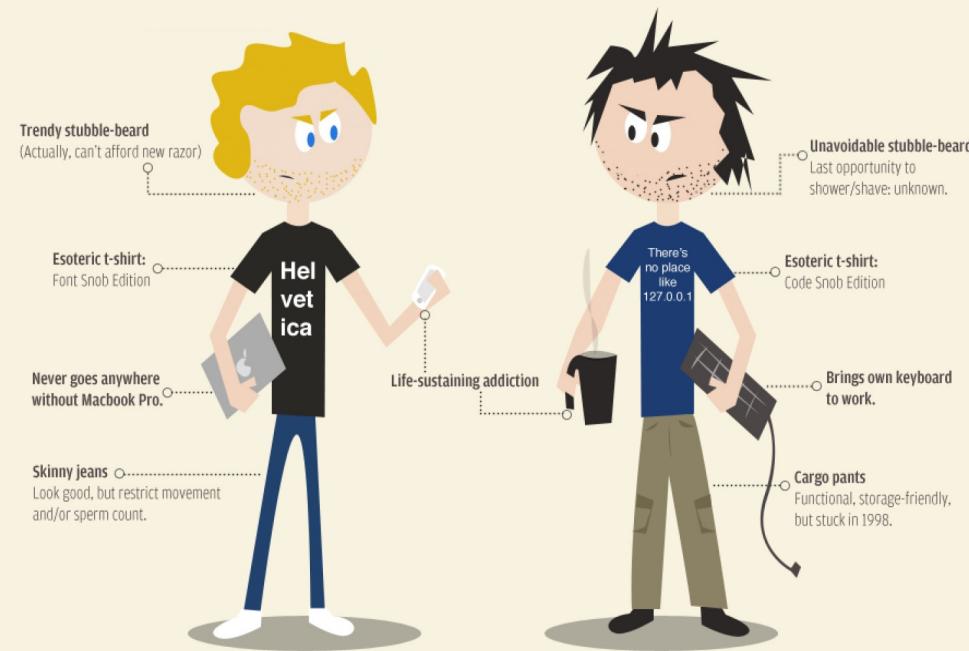
WAMP



What would you learn?

- ❖ You can know about every phase of web development
- ❖ You will build your own website
- ❖ You will finish all parts from UI,font-end, back-end to UX
- ❖ Knowledge about popular framework and CMS
- ❖ Capability to hunt web developing jobs

WEB DESIGNERS VS WEB DEVELOPERS



\$47,820
Web Designer
Median Salary

\$85,430
Web Programmer
Median Salary

What Web
Designers are
afraid of

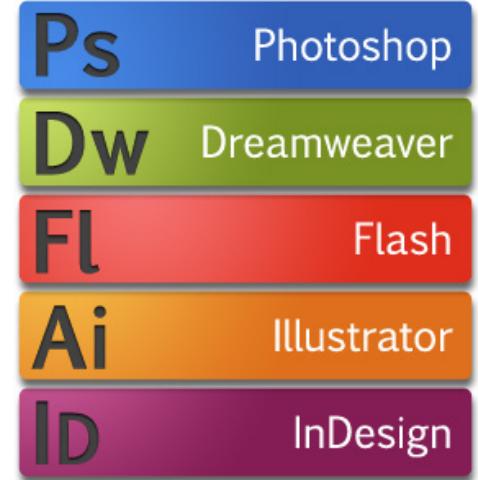
Databases
P.C.s
Client revisions
Fixed-price billing
(versus hourly billing)
Perl

Server crashes
.EPS files
Bosses who don't code
Carpal Tunnel

What Web
Programmers are afraid of

UI Design

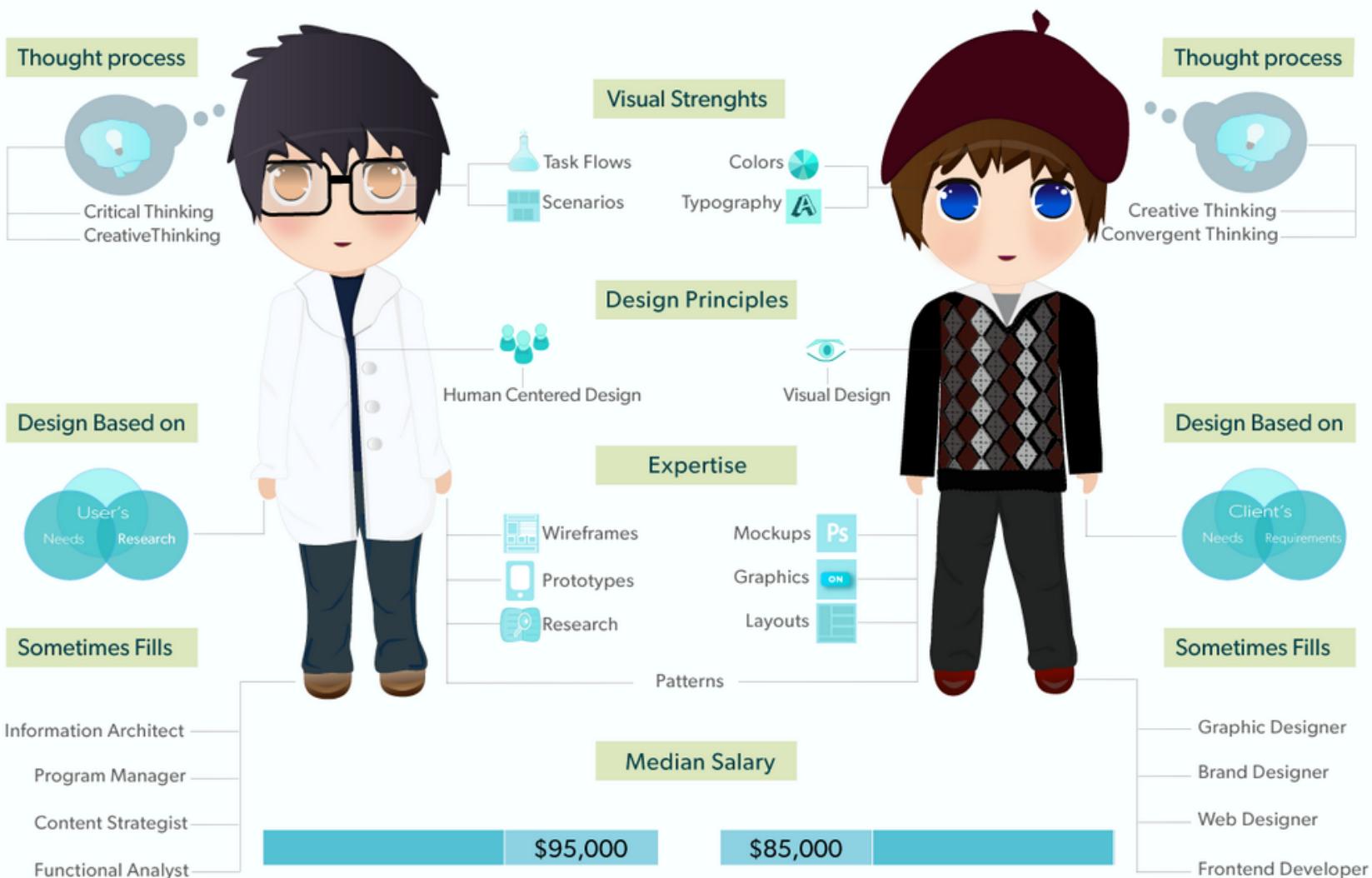
We call this Web Designer not Web Developer.



UX Designer

VS

UI Designer



HTML (Hyper Text Markup Language)

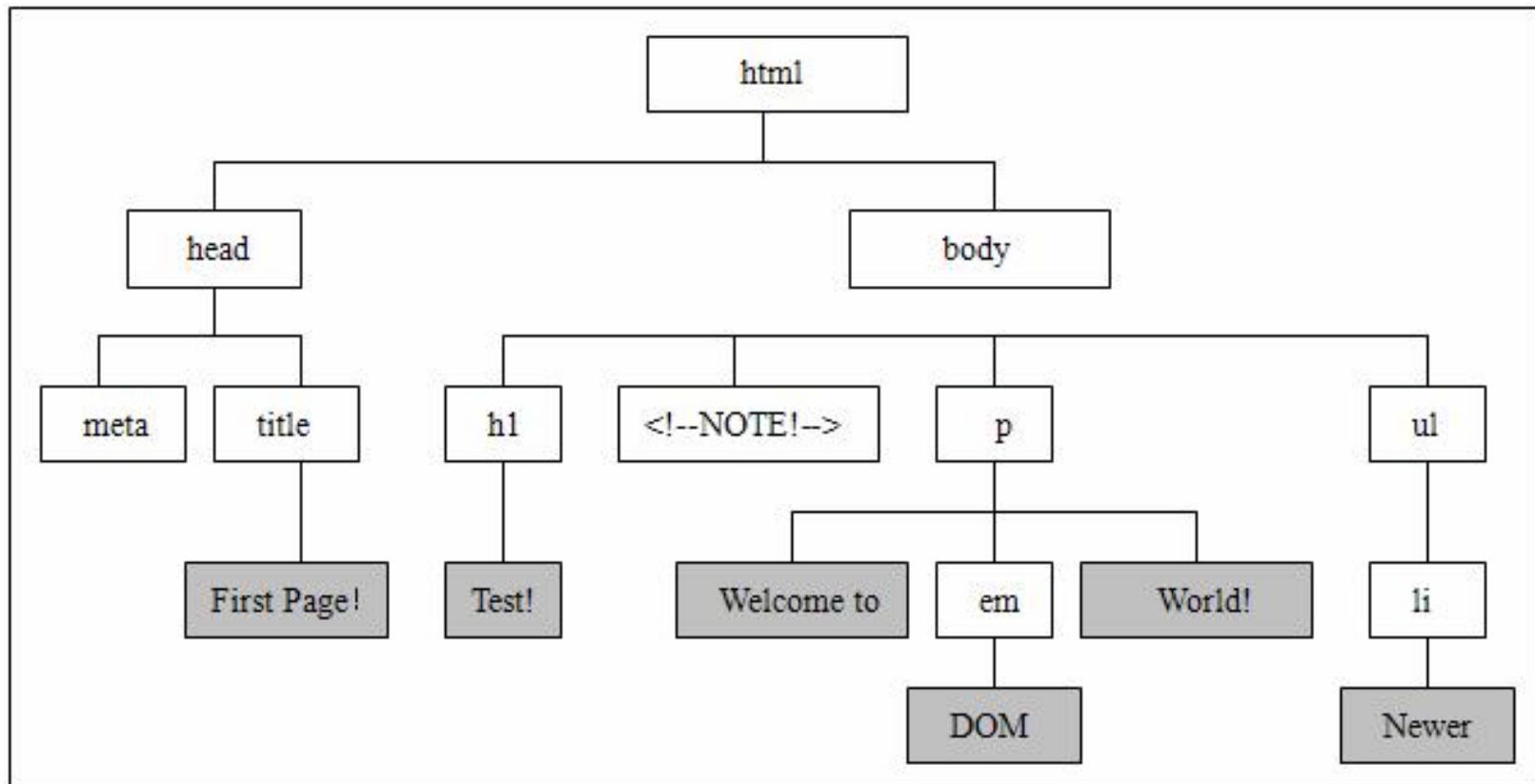
```
index.html*
30     <body>
31         <div id="content" >
32             <header class="app-header" >
33                 <div class="logo-wrapper">
34                     
35                 </div>
36                 <h1 class="app-name" >Expert Directory App</h1>
37             </header>
38             <aside class="contact-list" >
39                 <p class="notes" >
40                     Select the name of one of experts to view their contact details.
41                 </p>
42                 <ul id="contactList" >
43                     <!-- Contacts will be place here dynamically -->
44                 </ul>
45             </aside>
46             <section class="contact-card" >
47                 <article class="contact-info" >
48                     <div class="contact-images" >
49                         <div class="contact-image">
50                             
51                         </div>
52                         <div class="contact-methods" >
53                             <ul id="contactMethods" >
54                                 <li><a id="contactTwitter"></a></li>
55                                 <li><a id="contactFacebook"></a></li>
56                                 <li><a id="contactLinkedIn"></a></li>
57                                 <li><a id="contactBlog"></a></li>
58                             </ul>
59                         </div>
60                     </div>
61                     <div class="contact-text" >
62                         <div>
63                             <h3>
64                                 <span id="contactName"></span>
65                             </h3>
66                         </div>

```

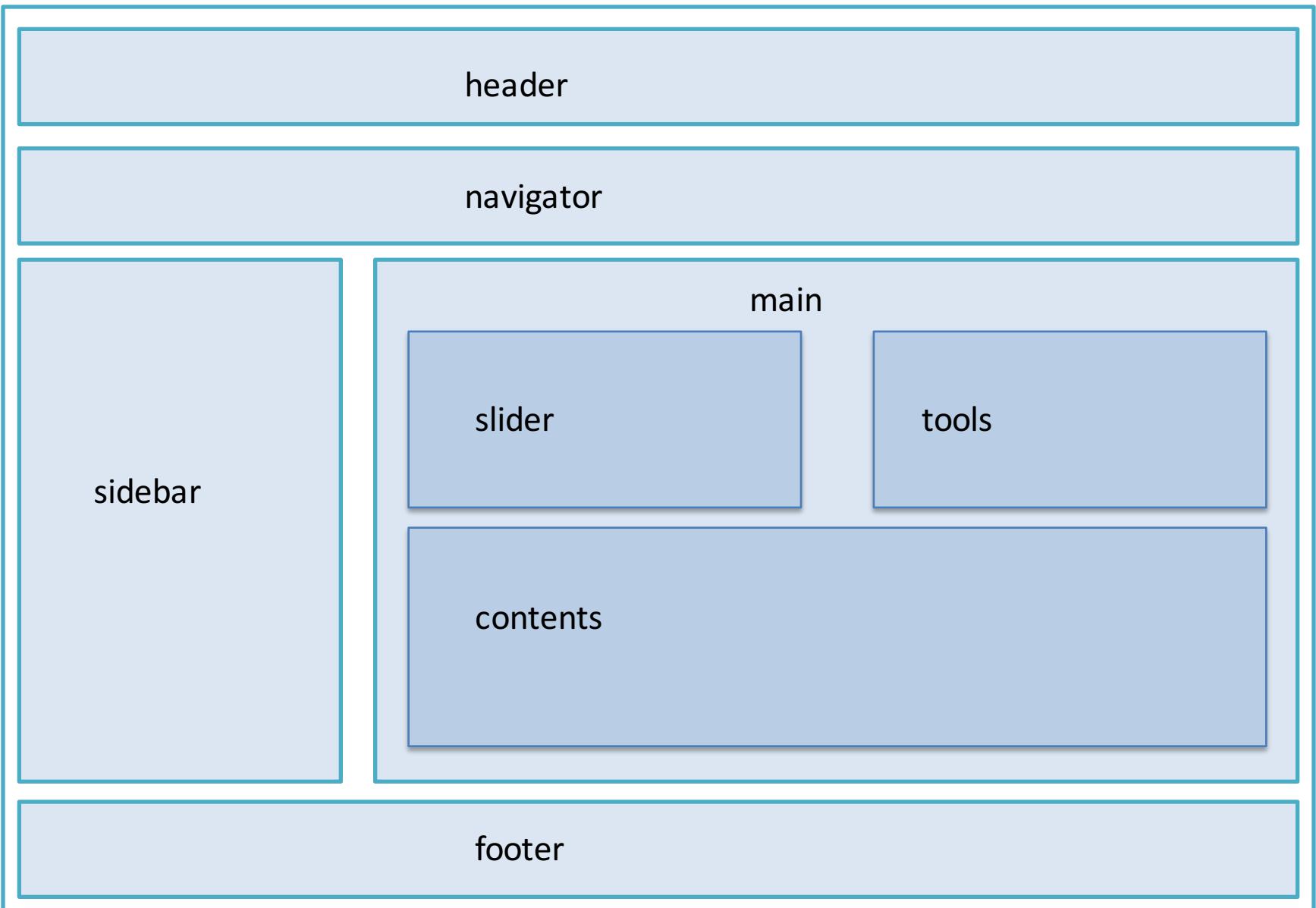
HTML Elements

code	html	option	textarea
col	li	p	tfoot
colgroup	iframe	param	th
dd	img	pre	thead
del	input	q	title
dfn	ins	s	tr
dir	isindex	samp	tt
div	kbd	script	u
dl	label	select	ul
dt	legend	small	var
em	li	span	
fieldset	link map	strike	
Font	menu	strong	
form	meta	style	
frame	noframes	sub	
frameset	Noscript	sup	
h1-h6	object	table	
Head	ol	tbody	
hr	optgroup	td	

HTML Code Structure



HTML Page Structure





宝贝 搜索 搜‘健康椅’试试，办公好选择 高级搜索

连衣裙 时尚女包 女士T恤 雪纺衫 中老年女装 风衣 童装 孕妇装 运动套装 打底裤 蚊帐 更多>

手机淘宝



商品服务分类	
	服装内衣 >
	鞋包配饰 >
	运动户外 >
	珠宝手表 >
	手机数码 >
	家电办公 >
	护肤彩妆 >
	母婴用品 >
	家纺居家 >
	家具建材 >
	美食特产 >
	日用百货 >
	汽车摩托 >
	文化娱乐 >
	本地生活 >
	虚拟服务 >

天猫 聚划算 二手 | 拍卖 一淘 电器城 Hitao美妆 旅行 云手机 特色中国



消费者保障

淘宝清仓
qing.taobao.com

羊绒1折开抢

原产地清仓 只买正宗

限时抢购

底价清仓 全场包邮



6.6包邮！！

2014淘宝养车节
车品低至1折/买就送



30个国际一线大牌

海量商场同款连衣裙新品特惠购

不做“霉”女人

妇炎洁 洗洗更健康



长安带你逛车展

送1500元新车养护礼包

长安全系普惠



10万开走SUV

天猫首发 优先提车



下周30℃怎么过

空调全场1688起



公告 规则 论坛 安全 公益

淘宝2014:开放多样性 舌尖中国二季 天猫首尝

阿里通信自建计费系统 来往首届419宇宙节



Hi 天之狼2011

领淘金币抵钱

会员俱乐部

登陆

免费注册

免费开店

便民服务



话费



游戏



旅行



保险



彩票



电影



点外卖



理财



电子书



音乐



水电煤



请期待

CSS

CSS exists to style your HTML - to present your content. The language of Cascading Style Sheets is somewhat different to HTML but it remains simple and straightforward.

```
1  body {
2      margin:0 auto;
3      padding:0;
4      font-family: Arial, Helvetica, sans-serif;
5      font-size:100%;
6  }
7
8  a {
9      color:#0e61cc;
10     text-decoration:none;
11 }
12
13 a:hover {
14     color:#0e61cc;
15     text-decoration:underline;
16 }
17
18 div#bg-wrapper {
19     width:1000px;
20     margin:0 auto;
21     background:url(images_new/body-bg.gif) center top repeat-y;
22 }
23
24 div#wrapper {
25     width:970px;
26     text-align:center;
27     margin:0 auto;
28 }
29
30 /* ##### HEADER #####
31 div#header {
32     height:62px;
33     background:#15447e url(images_new/logo.jpg) top left no-repeat;
34 }
```

CSS type

There are three ways to apply CSS to HTML: In-line, internal, and external

- ❖ In-line

```
<p style="color: red">text</p>  </style>
```

- ❖ Internal

```
<html>
<head>
<title>CSS Example</title>
<style>
  p {
    color: red;
  }
  a {
    color: blue;
  }
```

- ❖ External

```
<head>
  <title>CSS Example</title>
  <link rel="stylesheet"
  href="style.css">
</head>
```

Margin & Padding

Margin box

Border box

Padding box

Element box

Class & ID

- ❖ In the CSS, a class selector is a name preceded by a full stop (“.”) and an ID selector is a name preceded by a hash character (“#”).

```
#top {  
    background-color: #ccc;  
    padding: 20px  
}  
  
.intro {  
    color: red;  
    font-weight: bold;  
}  
//////////  
<div id="top">  
  
<h1>Chocolate curry</h1>  
  
<p class="intro">This is my recipe for making curry purely with chocolate</p>  
  
<p class="intro">Mmm mm mmmmm</p>  
  
</div>
```

Grouping

```
h2 {  
    color: red;  
}  
  
.thisOtherClass {  
    color: red;  
}  
  
.yetAnotherClass {  
    color: red;  
}
```

Equals

```
h2, .thisOtherClass,  
.yetAnotherClass {  
    color: red;  
}
```

Nesting

```
#top {  
    background-color: #ccc;  
    padding: 1em  
}  
  
#top h1 {  
    color: #ff0;  
}  
  
#top p {  
    color: red;  
    font-weight: bold;  
}  
  
//////////  
<div id="top">  
    <h1>Chocolate curry</h1>  
    <p>This is my recipe for making curry  
purely with chocolate</p>  
    <p>Mmm mm mmmmm</p>  
</div>
```

Pseudo Classes

- ❖ Pseudo classes are bolted on to selectors to specify a state or relation to the selector. They take the form of selector:pseudo_class { property: value; }, simply with a colon in between the selector and the pseudo class.

```
a:link {  
    color: blue;  
}  
a:visited {  
    color: purple;  
}  
a:active {  
    color: red;  
}  
a:hover {  
    text-decoration: none;  
    color: blue;  
    background-color: yellow;  
}  
  
input:focus, textarea:focus {  
    background: #eee;  
}  
p:first-child {  
    font-weight: bold;  
    font-size: 40px;  
}
```

Pseudo Elements

```
p {  
    font-size: 12px;  
}  
  
p:first-letter {  
    font-size: 24px;  
    float: left;  
}  
  
p:first-line {  
    font-weight: bold;  
}  
  
li:before {  
    content: "POW! ";  
}  
  
P:after {  
    content: url(images/jam.jpg);  
}
```

Positioning

- ❖ **static** is the default value and renders a box in the normal order of things, as they appear in the HTML.
- ❖ **relative** is much like static but the box can be offset from its original position with the properties top, right, bottom and left.
- ❖ **absolute** pulls a box out of the normal flow of the HTML and delivers it to a world all of its own. In this crazy little world, the absolute box can be placed anywhere on the page using top, right, bottom and left.
- ❖ **fixed** behaves like absolute, but it will absolutely position a box in reference to the browser window as opposed to the web page, so fixed boxes should stay exactly where they are on the screen even when the page is scrolled.

Shorthand Properties

```
p {  
    font: 14px/1.5 "Times New Roman", times, serif;  
    padding: 30px 10px;  
    border: 1px black solid;  
    border-width: 1px 5px 5px 1px;  
    border-color: red green blue yellow;  
    margin: 10px 50px;  
}
```

Selectors

❖ Universal selectors

```
* {  
    margin: 0;  
    padding: 0;  
}
```

```
#contact * {  
    display: block;  
}
```

❖ Child selectors

```
#genus_examples > li { border: 1px solid red }
```

❖ Adjacent selectors

```
h1 + p { font-weight: bold }
```

Attribute Selectors

- ❖ `input[type=text] { width: 200px; }`
 - ❖ `input[type=text][disabled] { border: 1px solid #ccc }`
-
- ❖ `[attribute^=something]` will match a the value of an attribute that begins with something.
 - ❖ `[attribute$=something]` will match a the value of an attribute that ends with something.
 - ❖ `[attribute*=something]` will match a the value of an attribute that contains something, be it in the beginning, middle, or end.

Transition

```
a:link {  
    transition: all .5s linear 0;  
    color: #ff0000;  
}  
a:hover {  
    color: #ffff00;  
}  
  
transition: .5s;  
transition-property: color, font-size;  
  
transition: color .5s, font-size 2s;
```

Rules

Importing

```
@import url(morestyles.css);
```

Media

```
@media print {  
    body {  
        font-size: 10pt;  
        font-family: times, serif;  
    }  
}  
@media screen, projection {  
    /* ... */  
}
```

Rules

Screen size

```
@media screen and (max-width: 1000px) {  
    #content { width: 100% }  
}
```

```
@media screen and (max-width: 800px) {  
    #nav { float: none }  
}
```

```
@media screen and (max-width: 600px) {  
    #content aside {  
        float: none;  
        display: block;  
    }  
}
```

Rules

Orientation

```
@media screen and (orientation: landscape) {  
    #nav { float: left }  
}  
/* You can apply numerous conditions separated by "and" */
```

```
@media screen and (orientation: portrait) {  
    #nav { float: none }  
}
```

Device

```
@media screen and (min-device-height: 768px) and (max-device-width: 1024px) {  
    /* You can apply numerous conditions separated by "and" */  
}  
@media screen and (resolution: 326dpi) { /* */ }  
@media screen and (min-resolution: 96dpi) { /* */ }  
@media screen and (device-aspect-ratio: 16/9) { /* */ }
```

JavaScript

JavaScript is a lightweight, interpreted programming language. It is designed for creating network-centric applications. It is complimentary to and integrated with Java. JavaScript is very easy to implement because it is integrated with HTML. It is open and cross-platform.

```
<html>
  <body>

    <script language="javascript"
type="text/javascript">
      <!--
        document.write("Hello World!")
      //-->
    </script>

  </body>
</html>
```

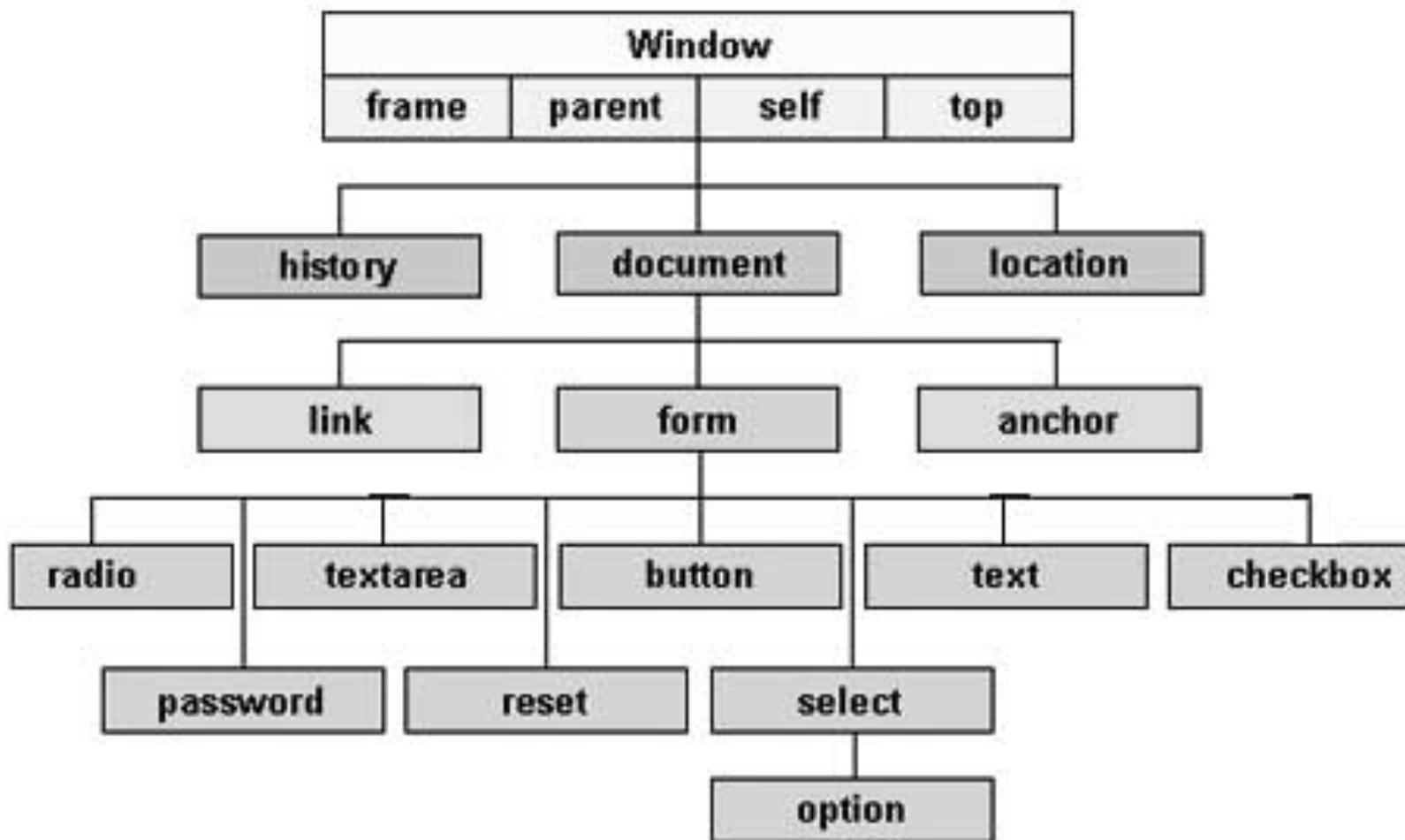


DOM

The way a document content is accessed and modified is called the **Document Object Model**, or **DOM**. The Objects are organized in a hierarchy. This hierarchical structure applies to the organization of objects in a Web document.

- ❖ **Window object** – Top of the hierarchy. It is the outmost element of the object hierarchy.
- ❖ **Document object** – Each HTML document that gets loaded into a window becomes a document object. The document contains the contents of the page.
- ❖ **Form object** – Everything enclosed in the `<form>...</form>` tags sets the form object.
- ❖ **Form control elements** – The form object contains all the elements defined for that object such as text fields, buttons, radio buttons, and checkboxes.

DOM



Validation

Form validation normally used to occur at the server, after the client had entered all the necessary data and then pressed the Submit button.

JavaScript provides a way to validate form's data on the client's computer before sending it to the web server. Form validation generally performs two functions.

- 1. Basic Validation** – First of all, the form must be checked to make sure all the mandatory fields are filled in. It would require just a loop through each field in the form and check for data.
- 2. Data Format Validation** – Secondly, the data that is entered must be checked for correct form and value. Your code must include appropriate logic to test correctness of data.

PHP: Hypertext Preprocessor

PHP is a recursive acronym for "PHP: Hypertext Preprocessor".

PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.

It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.

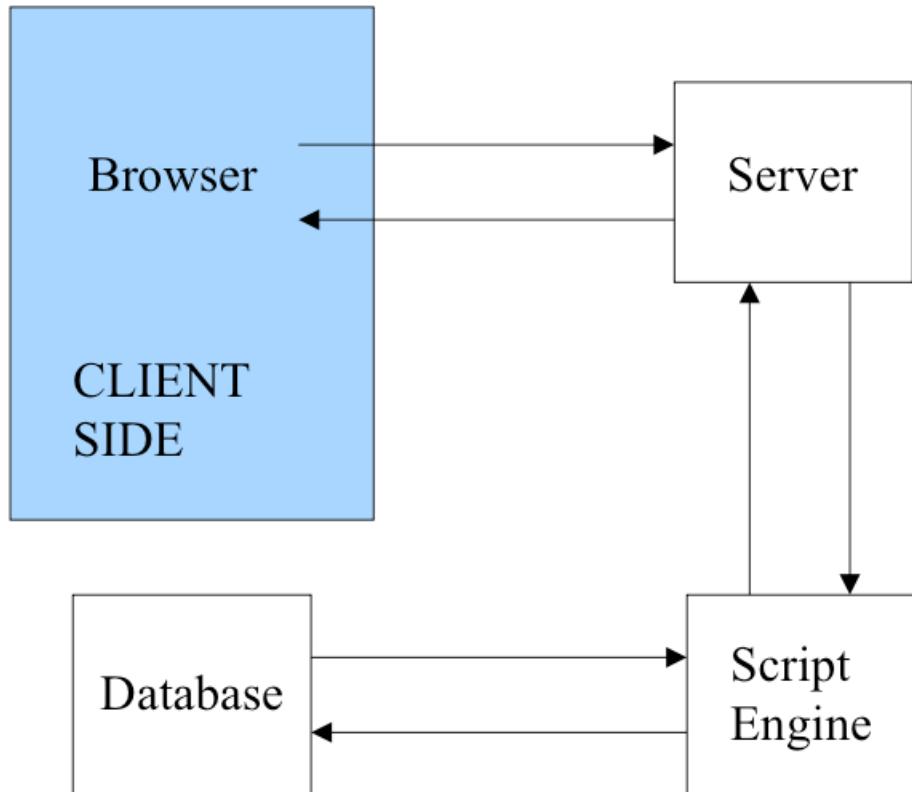
Features:

- ❖ Powerful and flexible.
- ❖ Easy to learn.
- ❖ C-like.
- ❖ Extremely portable.
- ❖ Cheap.
- ❖ Easy to set up.
- ❖ Works with lots of databases.
- ❖ Availability of source code (you can even contribute!).

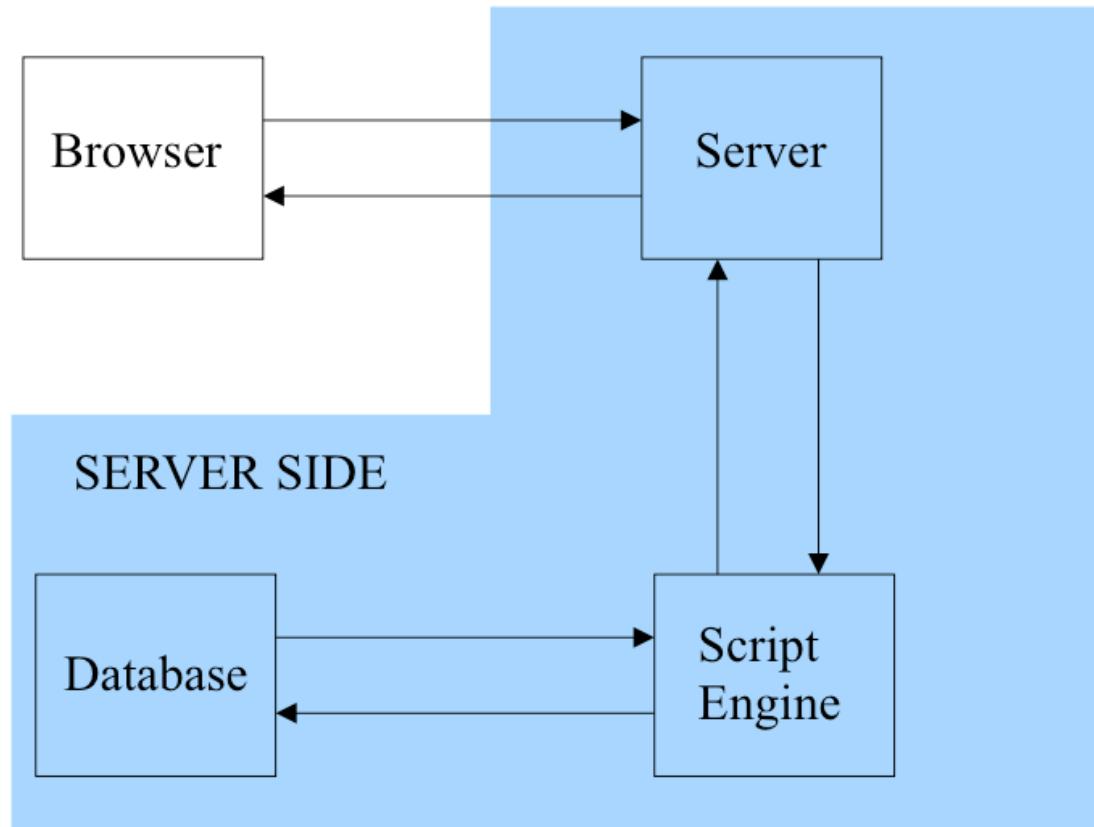
Common uses of PHP

- ❖ PHP performs system functions, i.e. from files on a system it can create, open, read, write, and close them.
- ❖ PHP can handle forms, i.e. gather data from files, save data to a file, thru email you can send data, return data to the user.
- ❖ You add, delete, modify elements within your database thru PHP.
- ❖ Access cookies variables and set cookies.
- ❖ Using PHP, you can restrict users to access some pages of your website.
- ❖ It can encrypt data.

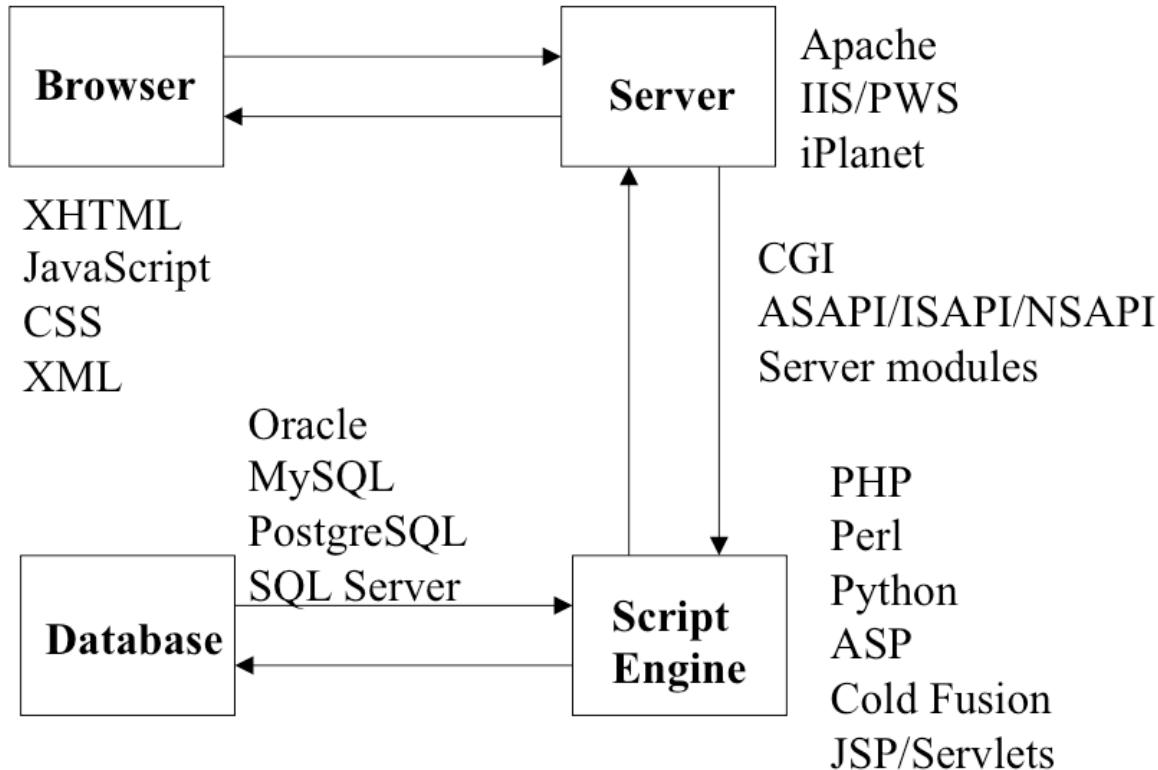
Client side



Server side



Technologies



Outline for the next

- ❖ Advanced Course for HTML5, CSS3, Jquery, etcs
- ❖ Advanced PHP
- ❖ Popular CMS
- ❖ Popular Frameworks
- ❖ Complex (Industrial Standard) Projects
- ❖ Important Interview Tasks