Using Handlebars

Dr. Charles Severance

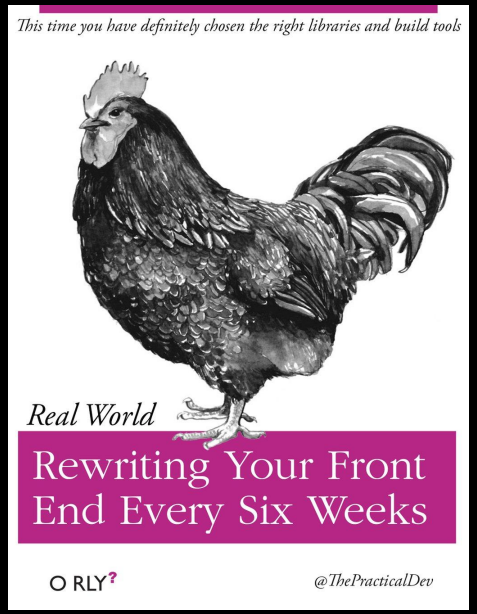
www.wa4e.com

http://www.wa4e.com/code/handlebars.zip

Rendering in the Browser

Applications are starting to use JSON "back end" services and construct the View HTML in JavaScript

- www.backbonejs.org
- www.emberjs.com
- www.angular.net
- www.reactjs.net
- ...



The only correct way to write JavaScript is whatever you were not doing last week.

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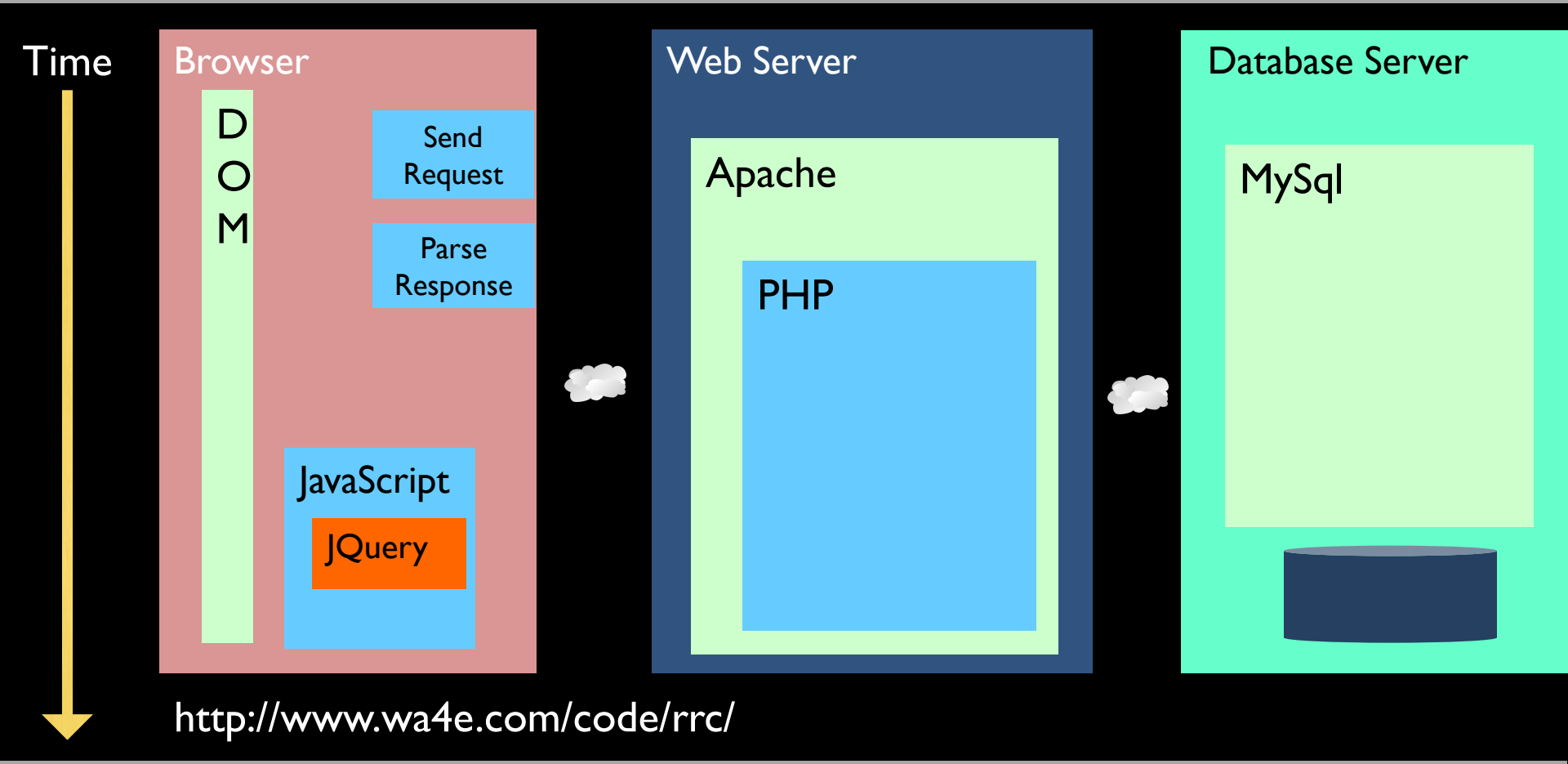
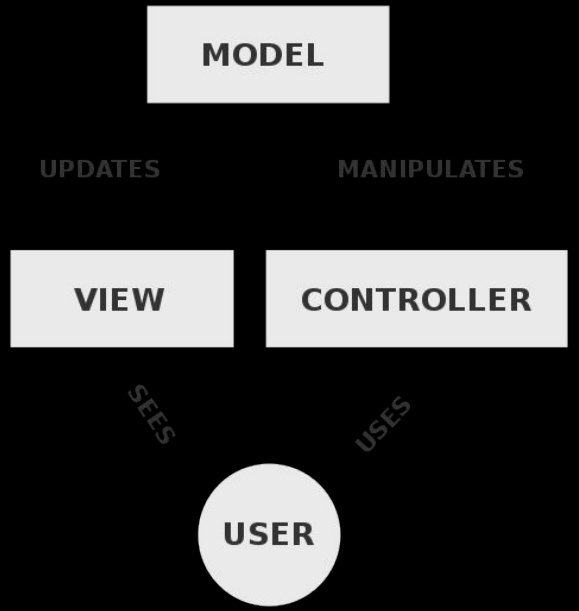

Time
Browser
DOM
Send Request
Parse Response
JavaScript
JQuery
Web Server
Apache
PHP
Database Server
MySql
http://www.wa4e.com/code/rrc/

Model-View-Controller

A model that defines the elements of a web application and how they interact

- View – Produce output
- Model – Handle data
- Controller – Orchestration / Routing



https://en.wikipedia.org/wiki/Model-view-controller

Model

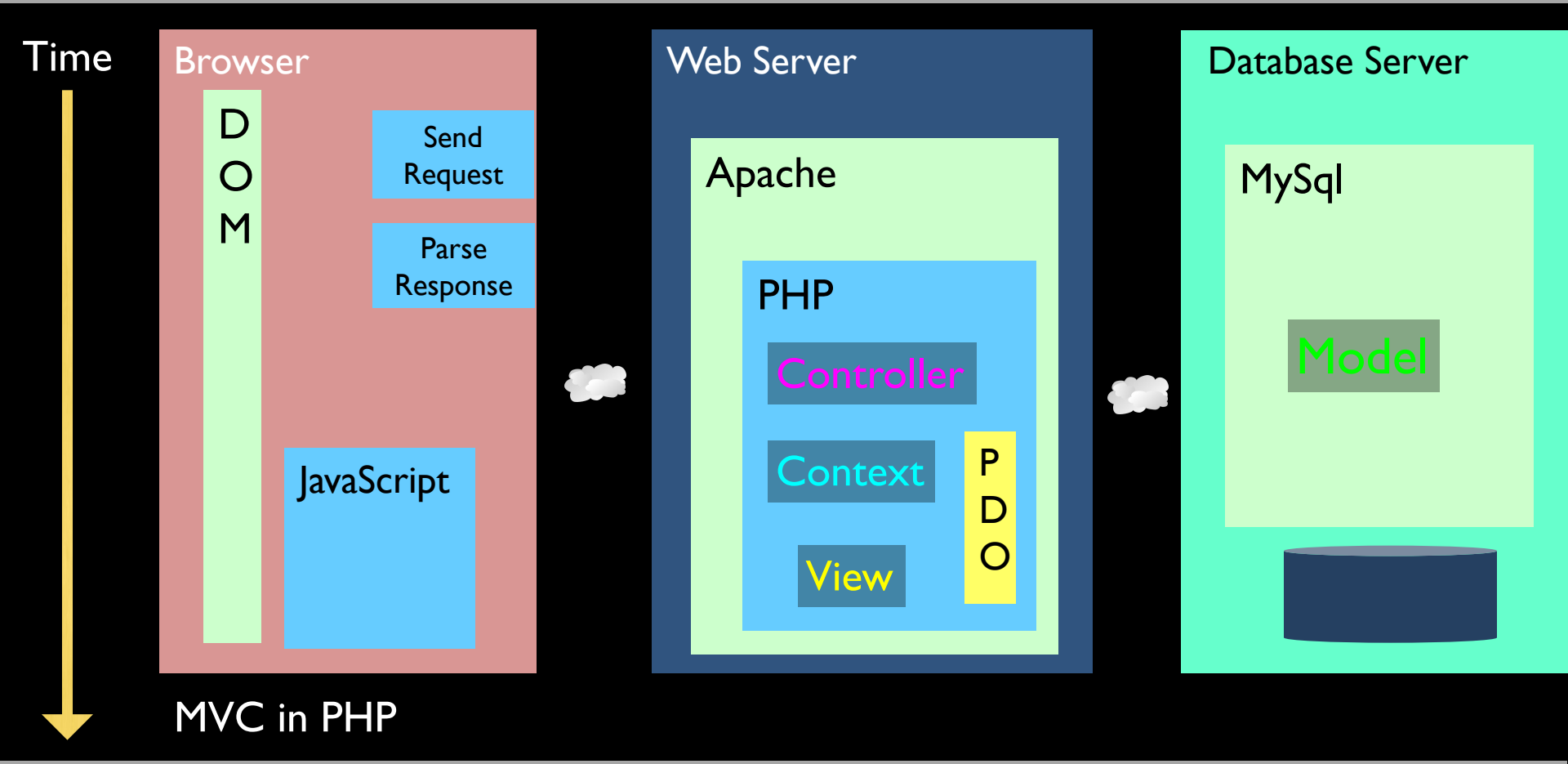
View

Context

Controller

```
<?php
    $oldguess = '';
    $message = false;
    if ( isset($_POST['guess']) ) {
        // Trick for integer / numeric parameters
        $oldguess = $_POST['guess'] + 0;
        if ( $oldguess == 42 ) {
            $message = "Great job!";
        } else if ( $oldguess < 42 ) {
            $message = "Too low";
        } else {
            $message = "Too high...";
        }
    }
?>
<html>
<head>
    <title>A Guessing game</title>
</head>
<body style="font-family: sans-serif;">
<p>Guessing game...</p>
<?php
   if ( $message !== false ) {
        echo("<p>$message</p>\n");
    }
?>
<form method="post">
   <p><label for="guess">Input Guess</label>
   <input type="text" name="guess" id="guess" size="40"
     value="<?= htmlentities($oldguess) ?>"/></p>
   <input type="submit"/>
</form>
</body>
```

guess.php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Controller
Context
View
PDO
Database Server
MySql
Model
MVC in PHP

handlebars.js

- Templates with curly braces
  - Adapted from Django / AppEngine
- Hot spots accept data from the context

Context +

```
<div class="entry">
  <h1>{{title}}</h1>
  <div class="body">
    {{body}}
  </div>
</div>
```

=

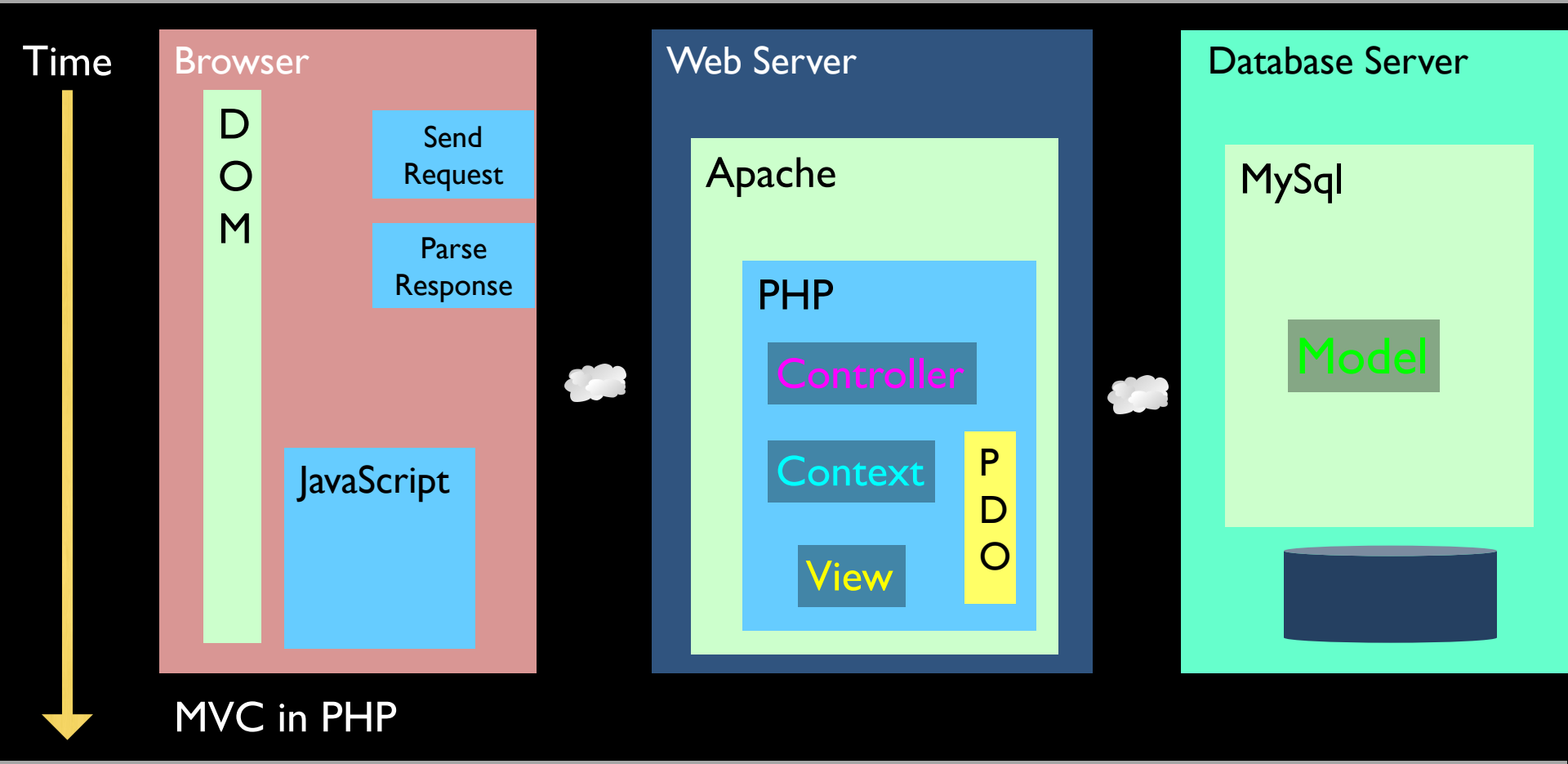
```
<div class="entry">
  <h1>Equations</h1>
  <div class="body">
    guess &lt; 42
  </div>
</div>
```

```
<div id="stuff"><img src="spinner.gif"></div>

<script id="entry-template" type="text/x-handlebars-template">
  <div class="entry">
    <h1>{{title}}</h1>
    <div class="body">
      {{body}}
    </div>
  </div>
</script>

<script>
var raw_tempate = $("#entry-template").html();
var template = Handlebars.compile(raw_template);
var context = {title: "Equations", body: "guess < 42"};
var rendered = template(context);
alert('Check out the sweet spinner..:)');
$('#stuff').html(rendered);
</script>
```

hand-01.htm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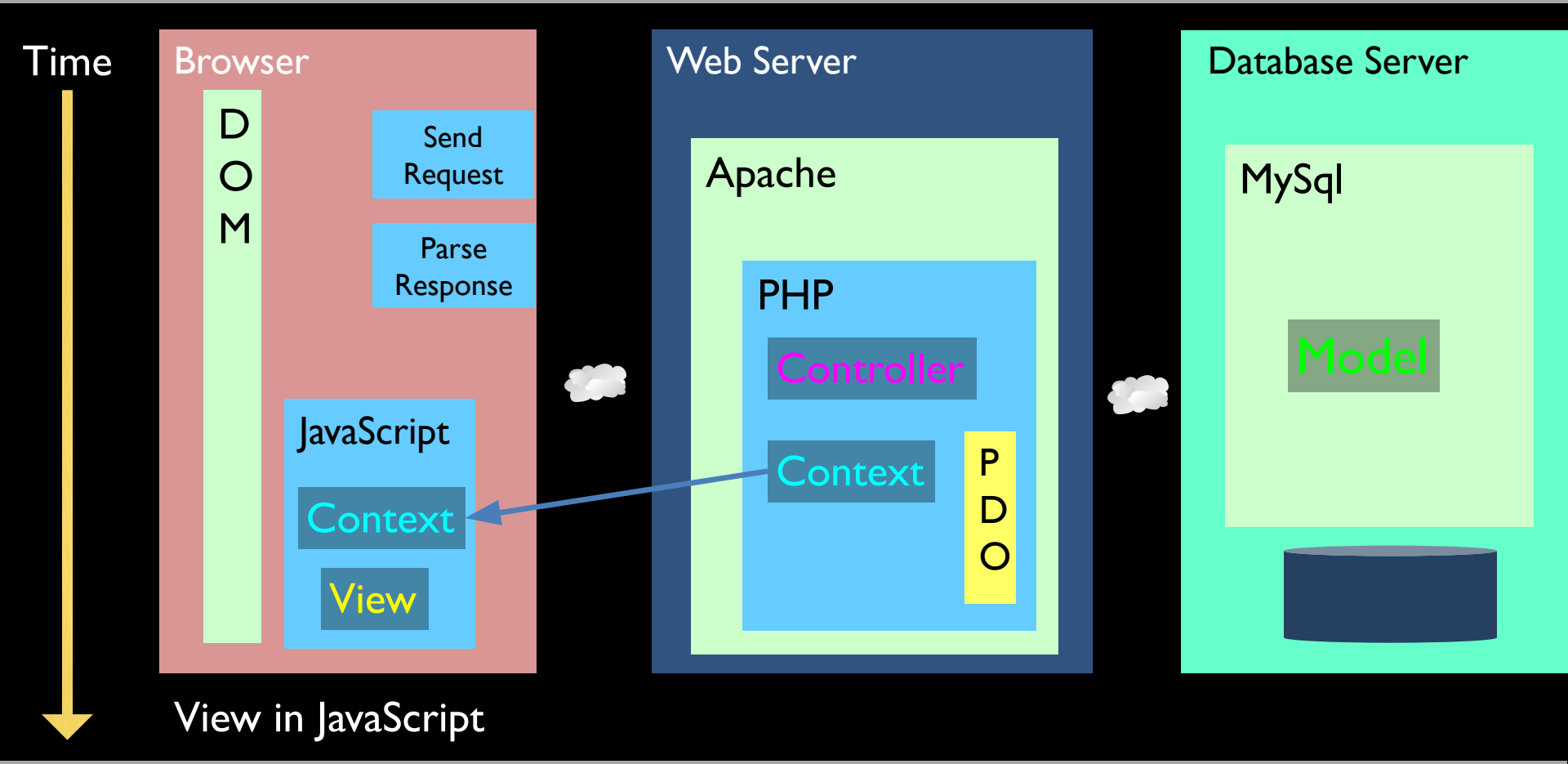
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MySql
Model
View in JavaScript

hand-02.htm

```
<div id="stuff"><img src="spinner.gif"></div>

<script id="entry-template" type="text/x-handlebars-template">
  <div class="entry">
    <h1>{{title}}</h1>
    <div class="body">
      {{body}}
    </div>
  </div>
</script>
```

```
<?php
  header('Content-Type: ...');
  $stuff = array(
     'title' => 'Mathematics',
     'body' => 'guess > 42');
  echo(json_encode($stuff));
```

```
<script>
var raw_tempate = $("#entry-template").html();
var template = Handlebars.compile(raw_template);

$.getJSON('hand-02-json.php', function (context) {
    var rendered = template(context);
    $('#stuff').replaceWith(rendered);
});
</script>
```

```
{ "title":"Mathematics",
  "body":"guess > 42" }
```

Handlebars Application

index.php

```
<script id="list-template" type="text/x-handlebars-template">
  {{#if profiles.length}}
    <p><table border="1">
      <tr><th>Name</th><th>Headline</th>
      {{#if loggedin}}<th>Action</th>{{/if}}</tr>
      {{#each profiles}}
        <tr><td><a href="view.php?profile_id={{profile_id}}">
        {{first_name}} {{last_name}}</a>
        </td><td>{{headline}}</td>
        {{#if ../loggedin}}
          <td>
          <a href="form.php?profile_id={{profile_id}}">Edit</a>
          <a href="delete.php?profile_id={{profile_id}}">Delete</a>
          </td>
        {{/if}}
        </tr>
      {{/each}}
    </table></p>
  {{/if}}
</script>
```

res-handlebars

index.php

```
<div id="list-area"><img src="spinner.gif"></div>

....

<script>
$(document).ready(function(){
    $.getJSON('profiles.php', function(profiles) {
        window.console && console.log(profiles);
        var source   = $("#list-template").html();
        var template = Handlebars.compile(source);
        var context = {};
        context.loggedin =
            <?= isset($_SESSION['user_id']) ? 'true' : 'false' ?>;
        context.profiles = profiles;
        $('#list-area').replaceWith(template(context));
    }).fail( function() { alert('getJSON fail'); } );
});
</script>
```

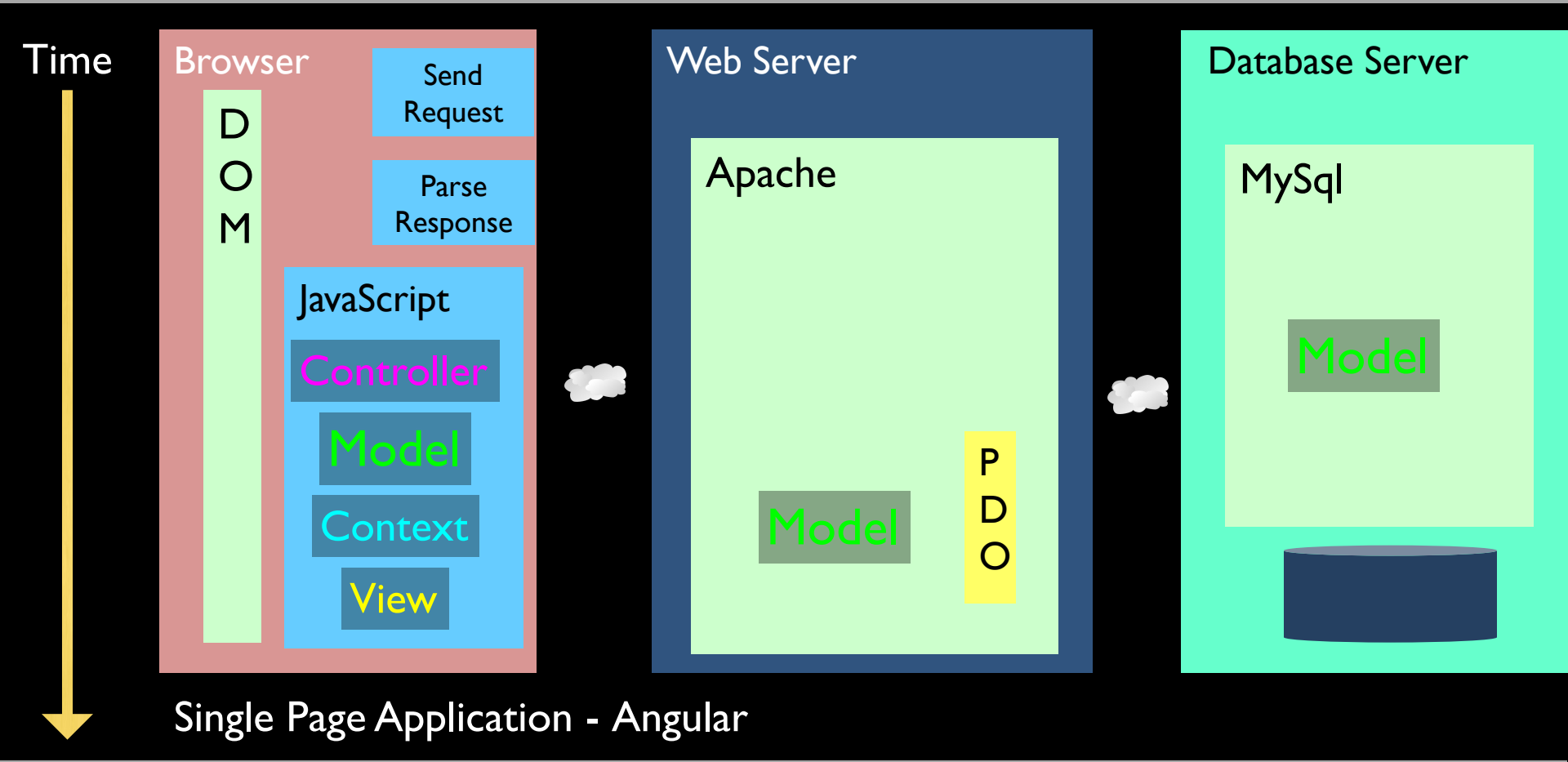
profiles.php

```
<?php
// This script works even if you are not logged in
require_once 'pdo.php';
header("Content-type: application/json; charset=utf-8");

$stmt = $pdo->query('SELECT * FROM Profile');
$profiles = $stmt->fetchAll(PDO::FETCH_ASSOC);
echo(json_encode($profiles, JSON_PRETTY_PRINT));
```

profiles.php


```
[
    {
        "profile_id": "5",
        "user_id": "1",
        "first_name": "Chuck",
        "last_name": "Severance",
        "email": "csev@example.com",
        "headline": "Python Rulez",
        "summary": "Python",
        "updated_at": "2016-04-04 21:15:27"
    },
    {
        "profile_id": "6",
        "user_id": "1",
        "first_name": "Colleen",
        "last_name": "van Lent",
        "email": "colleen@example.com",
        "headline": "Responsive Design Rulez",
        "summary": "HTML5!",
        "updated_at": "2016-04-04 21:16:12"
    }
]
```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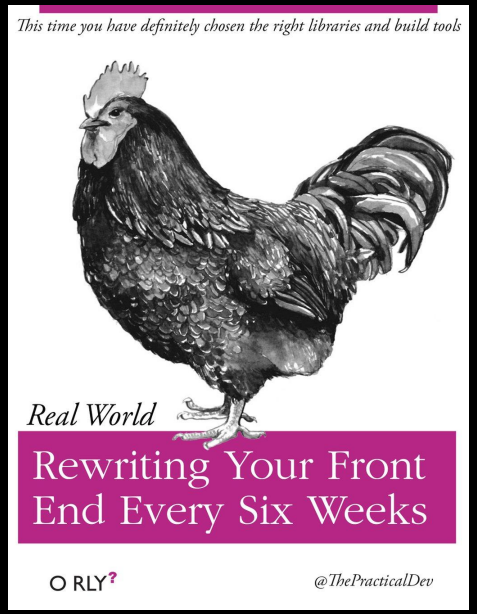
Single Page Application - Angular

Summary

- With JavaScript ES6 on the way and significant browser improvements on the horizon, it is likely that the "best practice" both on the server and the client will continue to evolve.
- It will continue to be important to understand how web applications work "all the way down" so you can work with these new innovations.



The only correct way to write JavaScript is whatever you were not doing last week.

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Acknowledgements / Contributions

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