



Daniel Cousineau & Chris Weldon
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PHP AND MVC

First Things First

- <http://www.google.com/search?hl=en&q=mvc>
 - Google is wonderful, learn how to use it.
 - Or Yahoo
 - There are 6,203,493* search engines, use one
- <http://www.toosweettobesour.com/>
 - Slides if anyone wants `em
- <http://www.chrisweldon.net/>

MVC Is...

- Model, View, Controller
- Object Oriented
 - Is communication between Model, View, and Controller *Objects*
- Software Engineering
- Organization
- RAD
 - Code reuse!

History



MVC Is Not New!

- Smalltalk-80 (circa **1980**)
 - MVC first discussed in 1979 by Trygve Mikkjel Heyerdahl Reenskaug
- MFC (Document/View)
- Java's Swing
- QT4 (KDE)
- Apple's Cocoa (Core Data)
- Notice a trend?
 - MVC is perfectly suited for GUI development...

MVC And The Web

- Made popular by Ruby on Rails
 - A good number of PHP MVC frameworks are Rails inspired
- Wikipedia currently lists about 17 PHP MVC frameworks
 - CakePHP
 - Symfony
 - Code Igniter
 - Zend Framework
 - Make your own (I did!)

Define MVC

Model – View – Controller

The background features a central point from which several lines radiate outwards. Two prominent lines are pink, while the others are in various shades of blue and grey. The lines create a starburst or sunburst effect against a dark background.

Model

- Wikipedia:
 - “The domain-specific representation of the information that the application operates.”
- Data Storage/Access
 - Often Data source backed
 - MySQL, MSSQL, Web Service, it doesn't matter...
 - Abstraction, Abstraction, Abstraction!

View

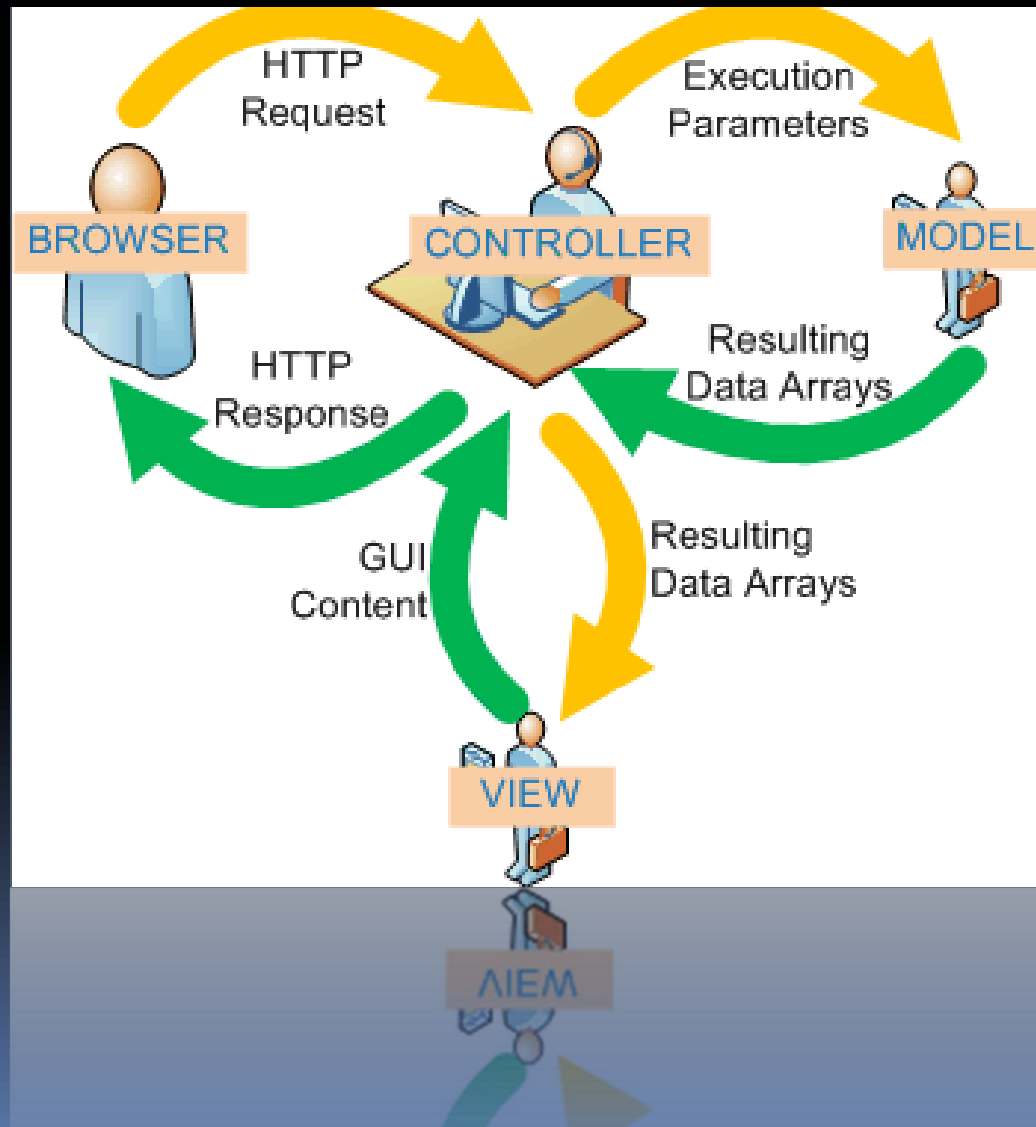
- Wikipedia:
 - “Renders the model into a form suitable for interaction, typically a user interface element. Multiple views can exist for a single model for different purposes.”
- HTML Templates
 - All formatting related code belongs here
 - A Smarty object is a good example
 - Any template engine works, however...
 - Abstraction, Abstraction, Abstraction!

Controller

- Wikipedia:
 - “Processes and responds to events, typically user actions, and may invoke changes on the model.”
- A BIG DEAL
 - Process user inputs, communicate with Models and Views
 - The Go-Between
 - Much of the application’s core logic
 - Utilize the abstraction of before!
 - Invoke model, assign values to views

Putting It Together...

<http://ash-mvc.org/website/framework/framework.html>



As A Framework



Common Traits

- index.php
 - Parses the URL
 - Often mod_rewrite used:
 - /controller/method/arg0/value0/arg1/.../valuen
 - Initializes proper controller
 - Executes correct method
 - Facilitates communication from controller to view
 - Signals view to render

Directory Structure

- Outside of web root. More secure! (generally)
- config/
- controllers/
- models/
- views/
 - Usually not PHP files
- includes/
 - Any extra libraries, e.g. PHPMailer
- framework/
 - Framework system files (do not have to reside in application)

Helpers and Plug-ins

- Usually common functions used by Views
 - E.g. `format_phone()`, `create_calendar()`, etc.
- Some loaded through `index.php`, some loaded specifically by controller
- Do not allow direct manipulation of models or controllers
 - Any code requiring access to models should be in the controller, not view

Other Utilities...

- Dispatcher classes
 - Abstract the location of files
 - Abstract creation of links/connections
- Caching classes
 - Cache Templates? Output? SQL Queries? Opcode
 - Caching individual Templates poses a special problem
 - Will dynamism of framework affect caching?

Why MVC?

- Good architectural design
 - Code is organized and structure
 - Code structure lends itself to an easy to understand directory structure
- Easy code maintenance
 - Because of abstraction, better strategic positioning of code will minimize the hunt for places to change
- Easy to extend and grow
 - Modify parent classes, drop in new controller, etc.

Sites Using PHP MVC Frameworks

- CakePHP
 - Mozilla Addons
 - The Onion's Online Store
- Symfony
 - TED.com
 - Yahoo! Bookmarks
- Pretty much everyone.

The Cake Was NOT a Lie!

