402 - Introduction to Digital Humanities Design and Programming

Spring Semester 2016

Week 11

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

<u>Initial Outline - loading the content so far (Part 1)</u>

- user opens framework and requests a URI, which loads the following
    - index.php
        - config/directory.php
        - frame/bootstrap.php

- bootstrap.php requires loader.php file, and instantiates a loader object, which is used to call
    - init_settings() method
    - init_db() method
    - auto_load_controller() method

- auto_load_controller() method requires router.php, instantiates a router object, and calls the getter methods to output required variables for load_controller() method

cont'd...

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

Initial Outline - loading the content so far (Part 2)

- load_controller() method uses the supplied parameters for controller, controller_dir, format, params to

- determine the required controller (eg:content)
- load the required controller class (eg:ContentController)
- check and instantiate an object for required controller class
- check content format and parameters for controller
- use getter method in controller class to request and output basic returned content
- raw content is returned based upon ID, but format will be used later to call viewer

Example basic content output

402framework (v0.4) & 402mini (v0.1)

- an outline and flow diagram for routing

- consider how each framework allows a user to view their requested content
    - start with the 'index.php' file
    - then follow the path of the app's logic
    - to the rendering of the content in the user's browser

- [402framework v0.4 test site](#) | [402mini v0.1 test site](#)

I	E	R	O	T	C	U	R	T	S	N	O	C
N	M	T	I	N	S	T	A	N	C	E	D	Q
H	E	L	A	J	T	M	K	G	Q	A	Q	P
E	T	R	D	L	R	N	E	L	B	M	A	K
R	H	E	E	J	U	T	A	S	N	R	R	S
I	O	P	Q	Q	T	S	T	T	A	G	E	Z
T	D	O	D	E	U	R	P	M	S	T	Q	T
A	S	C	R	D	A	I	E	A	T	N	C	Y
N	J	S	M	C	P	T	R	E	C	E	O	Y
C	L	Y	T	N	E	Z	R	E	J	N	Z	C
E	J	I	L	R	L	Z	P	B	R	L	E	J
T	O	T	S	G	R	J	O	N	R	P	K	Y
N	N	R	X	R	L	M	K	P	G	M	R	Z

OOP way of including a file within a class etc

Parent to child

A method used for getting

A method used for setting

Variable value persistent across classes and not a scope

Process of placing data (data structure etc) with methods inside the same module, normally a class

Instance of a class

Functions within a class

Concept of setting members of a class as private etc

If included in a class it will always be called

A way of passing data to a method

Object created by a class

Represent essential features without including background details or explanations

Object Oriented Programming

<u>Word Search - answers</u>

Require / OOP way of including a file within a class etc

Inheritance / Parent to child

Getter / A method used for getting

Setter / A method used for setting

Constant / Variable value persistent across classes and not a scope

Encapsulate / Process of placing data (data structure etc) with methods inside the same module, normally a class

Object / Instance of a class

Methods / Functions within a class

Scope / Concept of setting members of a class as private etc

Constructor / If included in a class it will always be called

Parameters / A way of passing data to a method

Instance / Object created by a class

Abstraction / Represent essential features without including background details or explanations

Object Oriented Programming

Initial Outline - framework so far...

- [HTML template output Home Page](#)

- [HTML template output sample content](#)

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

<u>/system/library/view.php - theme.css and theme.js</u>

- check and load user theme in the load_controller() method

- theme initialised in the init_theme() method in Loader class

- in draw_head() method in View class
    - conditional check for theme other than 'default', eg: 'minimal'
    - if conditional boolean is TRUE then draw_theme() method is called

- draw_theme() method draws selected theme CSS and JS files to HTML head element
    - this method checks for presence of theme.css and theme.js files in theme directory

[GitHub Code](#)

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

/design/themes/minimal/theme.css

- override css styles set in frame.css

- modify size, colour, position etc of elements and classes

- customise framework design and layout as required

[GitHub Code](#)

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

updated content loading - loader.php, content.php and new query_builder.php

- new class BuildQuery in /frame/model/query_builder.php
    - adds generic sql query methods

- BuildQuery class now inherited by ContentController class in content.php

- load_controller() method in Loader class updated to output dummy content for non-returned content results
    - this allows the draw_theme() method to be loaded correctly without returned DB results

GitHub Code (query_builder) | GitHub Code (loader)

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

updated method scope for inheritance

- method scope has now been set to protected for parent class

    - methods in BuildHTML class in html_builder.php
    - methods in BuildQuery class in query_builder.php

[GitHub Code](#)

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

content metadata table and content lookup

- new DB table for start of content metadata
    - record metadata per content record initially based on Dublin Core
    - content and metadata record associated in content_lookup table

- output to sidebar for each content selected in current route

- metadata table can be updated with further columns to match
    - publisher
    - contributor
    - format

and so on...

[DB Example]

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

<u>initialise metadata for content (title/description) for selected route - single field query</u>

- use get_content_field() method again with $format set to required table field
    - eg: name (for content title) and desc (for content description)

- add to new content metadata array $content_meta in Loader class

- pass $content_meta array to View class for use in drawing sidebar, content titles...

- output with div element and class as $format from $content_meta array

- style in default frame.css and override in theme.css if required

[GitHub Code](#)

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

<u>/system/library/loader.php - initial load_meta method</u>

- new load_meta() method in Loader class
    - accepts two parameters ($controller and $params)

- called in load-controller() method
    - after conditional check for content and before drawing theme

- method requires new MetadataController class in metadata.php class

- gets metadata results from DB for $controller.meta table (eg: content_meta) for specified field

- merges returned array of DB results with Loader class property of $content_meta

- $content_meta can now be used to update and output metadata results in the sidebar

GitHub Code

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

/frame/controller/metadata.php - initial MetadataController class

- new class to handle generic retrieval of metadata from DB
    - could be retrieved from content_meta or users_meta DB tables etc…

- inherits BuildQuery class

- allows metadata query against DB for ?_lookup and ?_meta
    - abstracts query against user selected route in URL
    - eg: content_lookup and content_meta

- returns DB results using a getter method

GitHub Code

Object Oriented Programming

Object Oriented Programming - Abstract overview of current framework structure

/system/library/view.php - initial draw_meta method

- accepts $content_meta array as parameter
    - this can be full metadata including content title and description or just metadata from required metadata table, eg: content_meta

- uses BuildHTML to create required html elements for metadata in $content_meta array
    - foreach loop for array

- outputs array values for metadata as required

- currently called from draw_sidebar() method

GitHub Code

Object Oriented Programming

Working framework so far...v0.4

[Home Page](#)

[Output Image Content](#)

[Output Text Content](#)

Object Oriented Programming

Working framework so far...v0.5

[Home Page](#)

[Output Image Content](#)

[Output Text Content](#)

402framework v0.5

- Compare and contrast v0.4 with v0.5
  - what has changed in the code and where?
  - what has changed in the view for the user?
  - update flow diagram

402framework resources

- Update SQL to v0.5 - GitHub SQL v0.5
  - use with 402framework v0.5

- GitHub v0.4 | GitHub v0.5

- v0.4 test site - image | v0.5 test site - image

402mini

A fun, mini framework for testing basic PHP routing...

- Compare and contrast v0.1 with v0.2
  - what has changed in the code and where?
  - what has changed in the view for the user?
  - update flow diagram

402mini resources

- [GitHub v0.1](#) | [GitHub v0.2](#)
- [v0.1 test site](#) | [v0.2 test site](#)