Composer: Dependency Manager for PHP

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What is a Dependency?

A ***dependency*** is a library of code that your project needs in order to function.

What is a Dependency?

```php
<?php
// Your project needs the “HelloWorld” library
require ‘/path/to/HelloWorld.php’;

// Now that we have the code, we can say hi!
$greeter = new HelloWorld();
$greeter->sayHello();
```

What is a Dependency?

The project in the example is ***dependent*** upon the “HelloWorld” library.

Dependency Dependencies

Sometimes your dependencies will have their own dependencies.

Dependency Dependencies

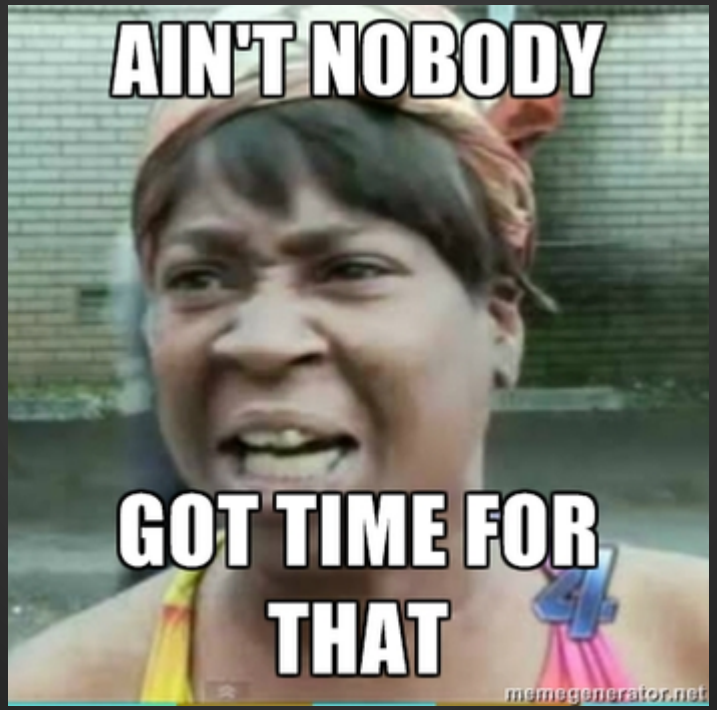
```
<?php
// “HelloWorld” needs the “Hello” library
require ‘/path/to/Hello.php’;

class HelloWorld extends Hello
{
   …
}
```

Managing Dependencies

- What libraries am I using?
- What versions of those libraries am I using?
- What libraries do my libraries need?
- What versions of those libraries do my libraries need?
- Where can I find those libraries?

Managing Dependencies



Dependency Managers

- Maven for Java
- bundler for Ruby
- npm for Node.js

PHP Dependency Managers

Composer - http://getcomposer.org

Use when managing dependencies for a single project

PEAR - http://pear.php.net

Use when managing dependencies for PHP on your system (multiple projects)

What is Composer?

“Composer is a tool for dependency management in PHP. It allows you to declare the dependent libraries your project needs and it will install them in your project for you.”

Why Composer?

- You have a project that depends on a number of libraries.
- Some of those libraries depend on other libraries.
- You declare the things you depend on.
- Composer finds out which versions of which packages need to be installed and installs them.

Download Composer

- Need PHP 5.3.2+
- Download Composer
- For information about installing on your OS, visit http://getcomposer.org/download

Get Started Using Composer

```
$ cd myproject
$ curl -sS https://getcomposer.org/installer | php
$ vi composer.json
$ php composer.phar install
```

Declaring Dependencies

Project dependencies are declared in a `composer.json` file.

Declaring Dependencies

Your project depends on “monolog” (http://bit.ly/1bjz17Z) to log information.

```
$log = new Monolog\Logger(‘name’);
$log->pushHandler(new
Monolog\Handler\StreamHandler(‘app.log’,
Monolog\Logger::WARNING));
$log->addWarning(‘Foo’);
```

composer.json

```
{
   “require”: {
      “monolog/monolog”: “1.0.*”
   }
}
```

`composer.json` : `require`

The `require` key tells Composer which packages your project depends on.

composer.json : require

“***Package names*** are mapped to ***package versions***.”

```
// “vendor/project”: “version”
“monolog/monolog”: “1.0.*”
```

Packagist

“***Packagist*** (http://packagist.org) is the main ***Composer repository***. A ***Composer repository*** is basically a package source: a place where you can get packages from.”

Autoloading

“Composer generates a `vendor/autoload.php` file. You can simply include this file and you will get autoloading for free.”

`composer.lock`

“After installing the dependencies, Composer writes the list of the exact versions it installed into a `composer.lock` file. This locks the project to those specific versions… Commit your application’s `composer.lock` (along with `composer.json`) into version control.”

Updating Dependencies

New versions of your project's dependencies will more than likely be released. "To update to the new version, use [the] `update` command. This will fetch the latest matching versions (according to your `composer.json` file) and also update the lock file with the new version."

Updating Dependencies

```
$ php composer.phar update
```

References

Composer

http://getcomposer.org

Packagist

http://packagist.org

PHP The Right Way

http://phptherightway.com