

Group 14 Tech Evaluation: Written Comparison

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Introduction To CakePHP

CakePHP is an open-source web MVC framework written in PHP, is in many ways is similar to other PHP frameworks on the market. Cake has changed significantly since it's last release. Cake 2.0 used arrays unlike Cake 3.0, which is object oriented. While CakePHP has high learning curve which some users may initially find intimidating, the overall benefits outweigh initial work as it provides many useful features including pagination, plugins, utility classes and so on. These built in features result in far more efficient development, as users can build complex applications faster than if they built the application from scratch with PHP. Standalone PHP can scale very poorly unless the developers implement a form of structure. CakePHP has built in organization that allows for high quality structure. Our group members have experimented with the following frameworks: Express.js, Django, Rail and Laravel, in order to provide an in depth comparison between other popular frameworks and CakePHP.

Comparison with Express.js

ExpressJS is a lightweight NodeJS framework that allows you to write a server-side application in JavaScript.

CakePHP decides many libraries and approaches in advance such as design pattern, ORM and user authentication, while expressJS gives you more flexibility to choose the tool you want to use. Granted ExpressJS users need to spend time writing more code or installing modules for almost everything. In terms of the application structure, CakePHP uses MVC by default. For ExpressJS, there are no conventions on the design pattern. Developers are free to modify their application structure to suit their app's needs. For a small ExpressJS app, you might not need any pattern at all, as all the code can stay in one main JS file.

ExpressJS offers many template languages to choose from. The default one is Jade, which comes with a friendly syntax and is easier to read and write than CakePHP's template language. For example, traditional HTML syntax like angle brackets are not needed anymore.

ExpressJS supports over 10 databases. To enable it, you are required to install a module for each database that you want to use. On the other hand, CakePHP supports 5 databases, but these are out-of-the-box, you only need to specify the name of the database in the configuration file.

Comparison with Django

Like Cake, Django is a full stack web framework, meaning it provides tools for launching web applications and it abstracts some of the details of request handling and data management with support for the most popular database systems. Both frameworks use similar architectural patterns, Cake with the prevalent Model-View-Controller, and Python with what is called Model-View-Template architecture (Templates are how python presents information to users by automatically generating HTML code). This architecture allows both frameworks to easily support scalable projects as they grow more complex with high cohesion.

Despite these similarities, they differ in significant ways. Primarily, Cake is built with PHP while Django is built with Python. One of the major outcomes of this difference is speed. Comparing Django with Python 2.7 (This is the current version of Django, future updates plan to move to Python 3.0) to CakePHP using PHP 5.6 (The current Cake3.x requirement) shows that Django performs roughly three times as fast as CakePHP. This allows for a better user experience with faster loading and response times. While it is not a requirement for CakePHP's most recent release, the new version of PHP, 7.0, actually reverses this trend and performs much faster than Python and other client-side programming languages.

Comparison with Rails

Rails is a ruby based web development framework. It is similar to the Cake framework because it uses Model View Controller (MVC architecture). Rails can be slightly more difficult to use because it follows stricter conventions which make it difficult to adapt to, compared to CakePHP, which is developed with MVC standard conventions using PHP. Both are Ajax supported, which is incredibly helpful for web development. Ajax allows for an application to communicate with a server with the need for refreshing the page. This allows for asynchronous development which is overall more efficient and faster. An obvious difference is seen between the two frameworks are their libraries.

Ruby is known for its unique use of "gems" which it's package manager for libraries. These gems can be installed via the Gemfile and many are open source that are created by ruby community members unlike the Cake PHP library which consists of built in functions and classes. Both frameworks are relatively easy to setup however Ruby can be quite difficult to configure on Windows due to compatibility with open-source gems and the windows development environment. CakePHP has better compatibility with multiple OS because of it's library standards. CakePHP and Rails were released within the same year which makes them both well documented and reliable, with dedicated community members.

Comparison with Laravel

Both CakePHP and Laravel are free and open source PHP frameworks. They run well on Mac OSX, Linux, and Windows and both have built-in ORM, which makes building queries easier and simpler.

One feature that makes them different is "Convention over Configuration". CakePHP focuses on the convention which means many configurations have already been setup and developers do not need to worry about them. As a result of convention, CakePHP helps to code more consistently in style and structure while working with a group of developers. For instance, in database CakePHP assumes all names of foreign key fields followed by `_id`. Although these default configurations make CakePHP easier, it reduces its flexibility compared to Laravel.

CakePHP is a better solution for extending core libraries since it comes with a robust plugin and the code can be reused more easily. As an example, CakePHP has plugins for NoSQL database and optional plugins can also be added for logging and caching.

Artisan is the command-line interface included with Laravel to help building applications more easily by providing a number of helpful commands. Also, Artisan supports custom commands defined by developer, which further enhances flexibility of Laravel.

Conclusion

Although CakePHP no longer a popular framework, it provides users with lots of brilliant features. Cake uses MVC architecture to deliver good project structures, and for approaches such as design patterns, ORM and user authentication, CakePHP has built in syntax. CakePHP is easy to start with because it is well documented and has simple and clear syntax. It is an ideal choice for someone who has never used PHP before as the PHP syntax can be difficult to get used to. While our group believes that this framework is still reliable and useful to learn, we have decided against using it due to such a low popularity rating. While it provides great tools for practice is not a practical choice for junior developers as there are few places that actually use it commercially.