

The Implementation of a Mini MVC-based Framework to Teach Web App Development

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Abstract

As for web app development, we can either develop from scratch or use existing frameworks such as ASP.NET (C#), Rails (Ruby), Laravel (PHP), CakePHP, CodeIgniter (PHP), Spring (Java), Express (Node.js). All those frameworks are so different regarding programming languages and syntax but most of them are built upon the Model-View-Controller (MVC) pattern. In the educational environment, it's a challenge to pick up the best framework to teach in class because each framework has its own advantages and drawbacks. To the best of our knowledge, there doesn't exist a suitable framework that helps learners to understand deeply MVC concepts (business logic, view UI and controller operation) since learners only learn how to use the framework to develop quick prototype. Moreover, learning a specific framework doesn't facilitate learners to explore and self-learn other frameworks easily. With the time constraint, we can not introduce all frameworks in class. Therefore, in this paper we suggest to teach about the MVC pattern and then implement a core MVC-based mini-framework (in PHP language). After having got this baseline framework, learners move on to extend it to build different web applications such as e-commerce apps. With strong knowledge of MVC pattern implementation, they are able to explore comfortably different frameworks by themselves.