MASTER'S PROJECT (FALL 2017)

TOPIC: *Dynamic Web Application Development with AngularJS and Webpack in a PHP Framework*

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ADVISOR: Dr. Haiping Xu

DATE & TIME: Tuesday, November 28, 2017, 2:00 PM

LOCATION: Dion 302E (Demo)

COMMITTEE MEMBERS: Dr. Jan Bergandy and Dr. Ming (Daniel) Shao

ABSTRACT

AngularJS is a front-end framework developed based on the MVC (Model-View-Controller) model, which supports two-way data binding and dynamic data updating from the backend. An AngularJS application is a collection of reusable components and services, allowing smooth communications among them. As one of its supported prominent features, AngularJS provides material design, which has been one of the most popular front-end design frameworks in recent years. AngularJS Material is both a User Interface (UI) Component framework and a reference implementation of Google's Material Design Specification, providing a physical surface and edges, with shadow for each component. In this project, we use this design concept, wrapped in an AngularJS library to provide the overall look and feel for website design. We introduced a standard approach to developing a highly-maintainable, reusable, decoupled and dynamic web application using AngularJS as the front-end framework in a PHP framework, with support from SASS (Syntactically Awesome Style Sheets). We used Webpack as a modules bundler, Yarn as a dependencies management tool, and the PHP scripting language to process and retrieve JSON-based database. As a case study, we extended the functionality of a previous design of the Concurrent Software Engineering Laboratory (CSEL) website at UMass Dartmouth. In our new design, we replaced the deprecated Bower, a package manager for the web, by Yarn and Webpack that facilitate better dependency management and asset generation. In our implementation, we added an administrator interface for updating web contents, and provided a brand new UI for both alumni and current graduate students to update their profiles.