CSI 6900 Intensive Graduate Project

Winter 2017

Professor: Stéphane S. Somé

Project Title: FitHub – Java EE application

Project Description:

FitHub is a Java EE application that provides an ecommerce platform for sale and purchase of fitness products together with hosting content that promotes fitness and wellness. The application will be built in Java leveraging industry standard frameworks that have proven to provide robustness and ease in software development. The application will be built using standard design patterns such as DAO, MVC pattern, etc. in order to provide separation of concerns and loosely coupled components which lead to easy maintenance and reusability.

Following is a list of features and services that will be provided by the application: -

- Provides users the ability to view all the products based on categories
- Display a list of top products
- Render detailed information pertinent to a product of interest
- Option to order a product by adding it to cart and payment via a payment gateway
- Customer registration and authentication
- Admin options to add\modify products & discounts

Following is a list of frameworks, tools and technologies that will be used: -

- **Java EE:** Provides the components for implementation
- **MySQL:** It will serve as the relational database for the application for persistence.
- **Eclipse:** It will provide the integrated development environment.
- **Maven:** This will be the build automation tool taking care of the project structuring and dependency management.
- **Hibernate:** It is an object relational mapping framework that maps object-oriented domain entities to relational database.
- **Spring Framework:** Will serve as the inversion of control container and ensure MVC pattern adherence.
- **Cucumber:** Will be used to write end to end test cases in Gherkin
- **Selenium WebDriver:** Will serve as the means for implementing the designed end to end test cases.
- **JQuery/JavaScript:** Provides ease of client-side scripting of HTML
- **HTML5:** Markup language used for structuring and presenting content on the web
- **Apache Tomcat:** It will play the role of a web server
- **CSS:** This will serve as the tool for describing the presentation of web pages
- **Web Services:** Provide mechanism for communication between applications over Hyper Text Transfer Protocol (HTTP)
- **GitHub & SourceTree :** Will be used for source code version control management

Topics Covered:

The following topics will be covered: -

- Java EE
- Coding standards & best practices
- Integration testing (workflow tests focussed on database integration)
- End to End testing
- Logging
- Object Oriented Programming

Project Deliverables:

1) A design document providing an overview of the architecture together with interactions amongst entities involved and design of the backend.
2) Implementation of the application (source code together with the testing code)

Project Phases Breakdown:

The project has been broken down into the following phases: -

1) Analysis of the requirements & intended behavior
2) Design of the architecture & environment setup
3) Implementation in tandem with low level & integration testing (following test driven development wherever feasible)
4) End to End testing focussed on the concept of 'Happy Path' testing ensuring optimum utilization of resources along key workflows.
5) Final documentation
6) Evaluation of solution

Evaluation Criteria:

Evaluation is based on the degree of realization of required capabilities, adherence to schedule, the quality of design produced, the quality of implementation in regard to testing and the overall documentation.

Evaluation Breakdown:

The following percentage will be assigned to each point:

- realization of required capabilities (50%)
- schedule (10%)
- quality of design (20%)
- quality of implementation & testing (10%)
- overall quality of documentation (10%)

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Date:

Signature:

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Date:

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