TOSHKENT SHAHRIDAGI INHA UNIVERSITETI
INHA UNIVERSITY IN TASHKENT

Module Name: Internet Programming
Module Code: SOC2110
Project Type: Group Project (4-6 students)
Date Set: 06.04.2018
Deadline: 06.05.2018 (midnight)
Weighting: 30%

Instructor: Dr. Sarvar Abdullaev
Email: s.abdullaev@inha.uz
Office Hours: Tue, 17:00 - 18:00
Wed, 16:00 - 18:00
Office: Room B411

Learning Outcomes

1. Understand the concepts of developments of common web applications
2. Understand the different standard and emerging technology solutions that exist, their uses, advantages and limitations
3. Practically apply the concepts, issues and methods with reference to the development of web applications.
4. Obtain skills in commercializing the developed application through publicly hosting and advertising it.

Project Deliverables:

1. A **PRINTED REPORT** as specified in Section 2
2. **ALL SOURCE CODE** of your web application in corresponding GitHub Classroom Repository.
3. **ALL SOURCE CODE** and **REPORT** on your web application in eClass.

Design Project Overview

You are required to develop a web application which involves both client-side and server-side programming. It should also use database. You should upload your final source code to corresponding GitHub Classroom repository and host your application on a remote server. Web application should be developed using HTML, CSS, PHP, MySQL, JavaScript and other related technologies covered in lectures.

Business Scenarios:

You have been employed by company X to develop a corporate website. You can select the area of business of the company X from given list below, or come up with your own idea.

- Hotel – customers can book rooms beforehand for certain period of time.
- Restaurant – customers can submit orders for food in menu and books tables.
- Publisher – subscribers can download books, authors can submit proposals to publish
- Taxi/Transfer – customers can book taxi beforehand indicating pick up and drop off locations.
- Online store – customers can buy goods online by adding items to their shopping cart and checkout at the end.
- Announcements board – users can post their announcements under different categories, moderators can modify, reorder or remove announcements.
- Personal blog – author can post blogs and subscribers can view and comment those blogs. As services, web site can advertise the skills and expertise of the author of the blog.
- Online surveys/tests – author can create surveys and tests, users can submit their answers and view results. As services, web site can advertise the functionality of taking customize online tests on given subjects.

Section 1: Web Application [weight 80%]

You are required to implement a web application for some company of your own choice using all the materials covered in lectures. Your application should support following general functionalities:

1. **Content (weight 20%)**
   - **Company Landing Page (index page):** this page should contain short information about the company along with its logo and some relevant photos.
   - **Products/Services Page:** this page should contain information about products/services this company provides. It should also allow searching particular products/services based on some parameters.
   - **Registration and "Sign In" Pages:** this page should collect important information about its potential customers and allow them to sign in to their personal profile.
   - **Make Order/Booking/Blog Post Page:** this page should create a record in the database which can be viewed by site administration. The administration can fulfill or cancel the order, and this information should be updated in database. Customer has to receive an email notification about the order status change. Depending on your business case, the statuses can be different too.

- **Process Order/Booking/Blog Post Page:** this page must be visible only to Admin user. In this page, company workers can process submitted orders by assigning fulfilled or cancelled statuses to them. Depending on your business case, the statuses can be different too.
- **Contact Us Page:** this page should provide a simple form for leaving feedback about the web site, services/products to the administration. It should send an email to corresponding address when feedback is submitted.

2. Look and Feel (weight 10%)

The entire site must be formatted using either pure CSS or Bootstap. This involves styling and positioning of all HTML elements and typesetting fonts. You should customize the default style to the design of your company. You get higher score for using Bootstrap.

3. Input Validation (weight 10%)

All data submitted via forms should be validated on **client side** using Regular Expressions and corresponding error message should be shown to the user. If your web site provides an API for front-end, then the data submitted through API should be checked on **server side** too.

4. Database (weight 10%)

Your web site should store all dynamic content in MySQL database deployed at the server. You can use PHP's PDO object to make a database connection and PDOStatements to interact with the database via prepared SQL statements. If you use Laravel, you should implement corresponding ORM layer via Eloquent. You get higher score for using ORM.

5. Use of External Web Services (weight 10%)

You are encouraged to integrate external services into your web site. You should be able to integrate external services both at the back-end and front-end. For back-end, you can use PHP's SoapClient component to consume SOAP services. For front-end, you can use jQuery and AJAX. You should find an external web service that is useful for the web application you are developing. You can use any of the open APIs from following directories and curated lists:

- https://www.programmableweb.com/apis/directory
- https://github.com/abhishekbanthia/Public-APIs
- https://github.com/toddmotto/public-apis

6. Use of Front-end/Back-end Frameworks and External Components (weight 10%)

You are encouraged to develop your web site using Laravel, or React or both. Besides that, use of external libraries such as jQuery, jQuery-UI, lodash, React's UI components (like Material UI, Bootstrap UI, Semantic UI, etc) are strongly encouraged at the front-end. You can use tools for running tasks (Gulp, webpack), managing dependencies (npm, composer), transpiling front-end source codes (babel, TypeScript, Sass, Less, etc) or using other Gulp extensions for minification, uglification, concatenation, etc at the back-end. **Note:** If you DO NOT want to use above technologies and implement your web site using plain PHP, you will ONLY be deducted 10% from your total score.

7. **Hosting (weight 10%)**
   You will be provided with a local hosting account at IUT's server soon once IT department prepares a hosting server. But if you do not want to wait for it, there are a lot free PHP hosting providers you can use. List is given below:

   - https://www.000webhost.com
   - https://devcenter.heroku.com/articles/getting-started-with-php
   - https://titanichost.net/free-hosting/
   - https://infinityfree.net
   - https://www.freehostia.com/

Section 2: Report [weight 20%]

Your report should contain following sections:

- On the cover page, the name of the company and its short motto. Names of all team members and their IDs, **LINK TO YOUR GITHUB REPO** and **LINK TO YOUR WEB SITE**.
- Brief description of the company and its key business (non-business) activities. Short information about its customers and workers, and their corresponding roles.
- Screenshots for each feature/requirements for the web site. Below each screenshot, you should briefly describe what functionality given screenshot realizes and how it has been implemented.
- Summary of each member's contribution to the project.
- Logins and passwords for different users of your web site such as customer, admin, etc.

Additional Notes

1. What is forbidden?

- You are NOT ALLOWED to use ready-made HTML templates, CSS animations/graphics or JavaScript/PHP code snippets taken from some other projects else in your project.
- You are NOT ALLOWED to use ready-made Content Management Systems (CMS) such as Wordpress, Joomla, Drupal, etc in your project
- You are NOT ALLOWED to use any third-party back-end framework other than Laravel in your project.
- You are NOT ALLOWED to use any third-party front-end framework other than React.

Failure to confirm with above rules may result in a lower or even a zero score for this project.

2. What is allowed?

- You are ALLOWED to use third-party components (NOT frameworks) for client-side programming such as jQuery, lodash, Bootstrap, etc, BUT their source code must be stored separately from your own code. It is OK to use dependency management tools

such as *npm, bower, yarn, etc* to install such components in your project folder. This way they will be stored separately in a folder like *"node_modules"* and do not get mixed with your code.

- You are ALLOWED to use certain hacks, workarounds or tricks written in public forums such as StackOverflow, StackExchange, CodePen, jsFiddle, etc, BUT you should put a comment with URL to a corresponding post on top of the snippet that you used in your code.

Useful Links to Learning Materials:

Git and Github:

You can learn more about using Git and GitHub from an interactive tutorials given below:

- https://www.codecademy.com/learn/learn-git
- https://try.github.io/levels/1/challenges/1
- Branching/Merging: http://learngitbranching.js.org

Laravel:

You can learn more about using Laravel from tutorials and video lectures below:

- https://www.tutorialspoint.com/laravel/index.htm
- Documentation: https://laravel.com/docs/5.6
- Video Tutorials for Some Projects on Laravel in LaraAcademy:
  - https://laracademy.co/courses/laravel-tidbits
  - https://laracademy.co/courses/build-a-basic-blog-from-scratch
  - https://laracademy.co/courses/emails-with-laravel
  - https://laracademy.co/courses/how-to-make-a-landing-page
- Laravel Tutorials on Youtube:
  - https://www.youtube.com/watch?v=EU7PRmCpx-0&list=PLillGF-RfqbYhQsN5WMXy6VsDMKGadrJ-
- Lessons in LaraCasts (some lessons are not free):
  - https://laracasts.com/lessons
- Laravel Awesome List (curated list of tools and learning materials):
  - https://github.com/chiraggude/awesome-laravel

React:

- Official React Tutorial: https://reactjs.org/tutorial/tutorial.html
- Video Lectures on React (Beginners): https://www.bigbinary.com/videos/learn-reactjs-in-steps
- Video Lectures on React (Intermediate): https://www.bigbinary.com/videos/keep-up-with-reactjs
- React Tutorials on Youtube:
  - https://www.youtube.com/watch?v=pgAvVxowaYU

    - https://www.youtube.com/watch?v=eOctQZ1EV0E&t=0s&list=PLLnpHn493BHFfs3Uj5tvx17mXk4B4ws4p
    - https://www.youtube.com/watch?v=A71aqufiNtQ
- Video Tutorials for Some Projects on React:
    - https://www.youtube.com/watch?v=204C9yNeOYI
    - https://www.youtube.com/watch?v=jgVkR5EKI68
    - https://www.youtube.com/watch?v=5oiXG9f6GO0&list=PLuNEz8XtB51K-x3bwCC9uNM_cxXaiCcRY
    - https://www.youtube.com/watch?v=Pi5apIbuiYg&list=PLuNEz8XtB51KthRFiVtI8cmXNL9qlQJ5U
- React Awesome List (curated list of tools and learning materials):
    - https://github.com/enaqx/awesome-react

Disclaimer:

- I reserve the right to grade each member of the team differently if I have a suspicion on the contribution of members
- I reserve the right to call the team for a short viva if I have doubts about the competence of the team and the quality of work it has submitted.