

COMP 3512 Assignment #2

Due Midnight-ish Monday March 19

Version 1.0, Feb 15, 2018 *[Most recent updated text will be in yellow]*

Overview

You can work in groups of two or three for this assignment. It is also possible to work individually, but I do **strongly** discourage it; please talk to me about this if you are planning on working by yourself. This assignment will allow you to apply the concepts and technologies covered in class to a “real” project situation. In this project, you will expand your first assignment.

Groups of three will have additional cases to complete. If working in a group, each member needs to take responsibility for and complete an appropriate amount of the project work. **Be sure to consult the instructor at least one week prior to the due date if your group is experiencing serious problems in this regard.**

I feel foolish saying this in a third-year university course, but it is your responsibility to read all the assignment instructions thoroughly and carefully. If you are unclear about something, ask me. But before you do, read the material in question again!

Beginning

To begin, I would recommend you clone one of your group member’s first assignment, since that will mean the database is all setup and ready to go. I would recommend making your Cloud9 workspace private (cloud9 only allows one private workspace so you may need to change your assign1 to public). Each group member will have to be given RW access to the workspace via the Share button. Cloud9 allows multiple people to simultaneously edit the same file, so you will have to be careful about overwrites if you have two people editing the same block of code.

GitHub

You will also need to create a private repo on Github for the assignment. Please name the repo the same as your workspace. One member will have to create it, and then add other members as collaborators. Needless to say, this means each group member will also need their own Github account. You will want to push out updates fairly frequently (1-2 times a day when working on it, or more frequently if lots of work is being done). I will examine the commits when marking. You can push your content from Cloud9 to GitHub via the terminal, using the following commands:

```
git init    [only need to do this one command once for your assignment]
git add *
git commit -m "Fixed the thingamajib (by randy)"    [alter message and name as appropriate]
git remote rm origin [just in case your cloud9 workspace still linked to my github]
git remote add origin https:... yourlogin-comp3512-assign2.git    [specify URL of github repo]
git push -u origin master    [login using your own individual github credentials]
```

For more information about Git and GitHub, read pages 571-577 of textbook (2nd Edition).

The starting GitHub repo is available at: <https://github.com/rconnolly/comp3512-w2018-assign2.git>

Submitting

You will need to share your workspace with me once it is complete. To do so, click the Share button in the upper-right part of the Cloud9 workspace. Invite me via my email (rconnolly@mtroyal.ca) and be sure to give me RW access. As well, you will need to add me as a collaborator to your GitHub repo when you have completed it.

Grading

The grade for this assignment will be broken down as follows:

Usability and visual design	20%
Program design and documentation	15%
Features	65%

USE CASE NAME:	Assignment 1 Functionality
DESCRIPTION:	Expected base functionality
1.	Your system must have ALL the functionality from assignment 1.

USE CASE NAME:	Program Design
DESCRIPTION:	Class Approach
1.	Make use of a class-based infrastructure for this assignment. Chapter 14/17 and Lab 17 provides code examples for implementing this infrastructure.

USE CASE NAME:	About Us
DESCRIPTION:	Display information about this site
1.	The system will display information about this site. Be sure to mention that this site is hypothetical and was created as an assignment for COMP 3512 at Mount Royal University taught by Randy Connolly. Add a link to your GitHub page for the assignment. As well, be sure to list the group member names and roughly what parts of the project each member implemented. If you used any external resources, be sure to cite (or link to) them here.

USE CASE NAME:	Bootstrap Theme and Site Design
DESCRIPTION:	Design site's appearance by customizing Bootstrap
1.	<p>This time around you will be expected to change the visual design of your site. I would recommend using the live customizer at http://bootstrap-live-customizer.com. This site allows you to modify any of the LESS variables used by bootstrap; the end result is a new alternate version of bootstrap.css. If you want to begin with the LESS settings from assignment 1, within the customizer site, simply import the customized.less file that can be found in the chapter14\project2\css folder.</p> <p>You may want to make use of a color scheme designer such as http://colorschemedesigner.com, http://www.colourlovers.com, https://kuler.adobe.com, or http://design-seeds.com if you need help coming up with a color scheme. Your color scheme must be substantially different from what you used in Assignment 1.</p> <p>Your customized theme must also use two fonts (different from assign 1) from the Google Web Fonts collection.</p> <p>I expect more than just color changes. You will also want to change things like navigation bar sizes, footer appearance, panel sizes, font sizes, etc. Many of these you can do via the customizer; others may require additional CSS formatting outside of Bootstrap.</p> <p>Minor style changes to the basic Bootstrap "look" will receive lower design marks than those groups that make more substantial changes. Similarly, if you simply use one of the pre-defined themes, your design mark will be lower.</p>

USE CASE NAME:	Browse Posts
DESCRIPTION:	System allows user to browse posts.
1.	<p>Display list of posts using similar layout as the one you've already used in the Chapter 11 Project 3 lab. Notice that the listing should only display the first few lines of the message field. There is no ratings data in the database for posts so there won't be any stars displayed. The Read More button should take the user to the Single Post page with appropriate query string. The user name should be link to single-user.php with appropriate query string.</p>

USE CASE NAME:	Single Post
DESCRIPTION:	System allows user to display a single post
1.	Display the relevant information for the specified post. Also display a list of images for that post (info in PostImages table).

USE CASE NAME:	Browse Images
DESCRIPTION:	System allows user to browse images
1.	Remove the Filter button. Use JavaScript to dynamically submit whenever the user selects a continent, country, city, or enters a search item.

USE CASE NAME:	Single Country
DESCRIPTION:	System allows user to view information about a single Country
1.	Extend the Single Country page from the first assignment by display a static map image using the Google Static Maps API. This will require getting an API key from https://developers.google.com as well as enabling the API from the Google API dashboard.
2	Change the layout so there are two main columns: the country info and the map will be in one column, and the images from the country in another column. Make the first column the largest one.
3	For groups of three , add any cities for which there are images as markers to this static map.

USE CASE NAME:	List of Images
DESCRIPTION:	System displays a dynamic preview of image
1.	<p>For the lists of images in single-user, single-country, single-post, and single-city, add JavaScript preview of the image when the user mouses over an image in the list. This preview should display the version from the <code>small</code> folder along with the title of the image in a nicely displayed <code><div></code> that is positioned at the location of the mouse pointer. When the mouse moves off the image, then the pop-over preview should disappear.</p> <p>I expect you to write this JavaScript yourself, and not make use of something like the Modal or Popover in Bootstrap. Your code simply needs to set the <code> src</code> attribute appropriately, make the <code><div></code> visible (via CSS property change), and positioned in the appropriate location (again via CSS property change). It really is only a few lines of code, and you need to be able to write such simple stuff yourself without running to Stack Overflow or W3Schools!!!</p>

USE CASE NAME:	Browse Cities
DESCRIPTION:	System allows user to browse cities. This case is only for groups of three.
1.	<p>Displaying a list of cities (sorted by name) for which there are images. The layout can be similar to the other browse pages. Be sure to add link for this page in the header. Each city name will be link to Single City page with appropriate query string.</p>

USE CASE NAME:	Single City
DESCRIPTION:	System allows user to view information about a single City. This case is only for groups of three.
1.	Display name, population, elevation and time zone for city. Also display a list of images for this city.
2.	Display a static map image using the Google Static Maps API showing the city's country with the city indicated via a marker.

USE CASE NAME:	Simple Search
DESCRIPTION:	System allows user to search for travel images from a single search box.
1.	This use case is initiated when a user enters text into search box and hits some type of submit button or link. Note: this search box should be accessible everywhere in the site.

USE CASE NAME:	Search Results
DESCRIPTION:	System displays a listing of search results
1.	This use case is initiated after the user makes a search request.
2.	<p>This system will show the matching images within <code>browse-images.php</code>.</p> <p>The results will be those images whose image title or description contains the search text (i.e., Like <code>"%searchvalue%"</code>).</p>

USE CASE NAME:	Single Image
DESCRIPTION:	System allows user to details of single image
1.	Extend the Single Image page from the first assignment by adding a dynamic Google Map (https://developers.google.com/maps/documentation/javascript). Display a marker of the image's location on the map. This will require a little bit of JavaScript. As well, your PHP will page will have to generate a few lines of JavaScript to insert the correct latitude and longitude from the database table into the JavaScript. Be sure to set the map zoom sufficiently large so that the maps shows only a few kilometers around the location.
2	For groups of three , display the average rating of the image (from the ImageRating table) as yellow + white stars similar to what you did for Chapter 11 Project 3 lab.

USE CASE NAME:	View Favorites
DESCRIPTION:	Way to view and modify the contents of user's favorites list.
1.	Initiated when user adds an item to the favorites list, or when user clicks any of the view favorites links/buttons.
2.	The system will display a listing of the contents of each of the two favorites list. For favorite posts, display small square image and post title; for favorite images, display small square image and image title. Allow the user to modify the favorites list's contents (i.e., remove an individual item as well as way to quickly remove all items from the list).

USE CASE NAME:	Add To Favorites
DESCRIPTION:	Way to add an item to the user's favorites travel image or travel post).
1.	Initiated when user clicks the Add item to favorites link/button.
2.	<p>The system will add the item to the appropriate favorites (i.e., post or travel image) list. Use JavaScript to display a previously hidden <code><div></code> styled using the Bootstrap <code>alert</code> class. The <code><div></code> should contain a message saying the image (or post) has been added to the Favorites. This <code><div></code> should disappear after two seconds (use the <code>setTimeout</code> function to hide it). Again, work this JavaScript out on your own: it's only a few simple lines of code.</p> <p>The favorites list only needs to last as long as that session.</p>

USE CASE NAME:	User Profile
DESCRIPTION:	System allows user to view their profile information.
1.	Display the information from the Users table (FirstName, LastName, Address, City, Region, Country, Postal, Phone, Email) in a sensible, attractive way.
2	This page can only be accessed if the user is logged in. Thus, if the user tries to go to this page (by clicking on a link or requesting this page), you must redirect to the Login page.

USE CASE NAME:	Login
DESCRIPTION:	Redirect to login page if not logged in
1.	<p>The user profile page should not be accessible unless the user first logs in. You will need to check Session state; if the user has not yet logged in, then redirect to a page named login.php.</p> <p>The login information is in the UsersLogin table.</p> <p>The actual password for each user is abcd1234, but has been salted and subjected to an MD5 hash function. That means to check for a correct login, you will have to perform two queries: the first to retrieve the Salt field for the entered UserName (e.g., tgoyer@apple.com) from the UserLogin table, and if that user exists, concatenate that salt value and the entered password, and run them through the MD5 function. If the result of that function matches the result in the Password field, then log the user in.</p> <p>The login form needs to be attractive and fit the design of the rest of the site. You may want to make use of some of the bootstrap form components to improve the attractiveness and usability of your form.</p>
2	If a user is successfully logged in, then a few things need to happen. First, you need to save the UserId value for the user in session state. Second, redirect to the user profile page. Third, change the Login option in header to Logout.
3	If the login was unsuccessful, then redisplay the form with relevant textual error messages and formatting. I expect that you will change the styling of the form elements in some way to make it clearer that the login was unsuccessful. The textual error message should disappear once the user starts typing into the user name or password fields.

USE CASE NAME:	Logout
DESCRIPTION:	Allow the user to log out
1.	Add an icon to the top right toolbar that allows the user to logout. Clicking on it will empty out the relevant session state variables, redirect to the login page.

Guidance

This is substantial assignment and your group will likely need to invest 50-70 hours into it. Some of you will need much less but some groups might need more. I would recommend the following process:

1. This is a data-driven site, so I would recommend beginning by constructing the data access layer. To begin, create data access objects for Images, Posts, Users, and Countries. The architecture provided in chapter 14/17 gives you `GetAll()` and `GetByID()` functionality already. You will need to add additional methods that match the functionality required by the use cases. I wouldn't bother implementing a complex business layer since this assignment is mainly just displaying data. I would recommend using the `testdb-classes.php` page provided in the labs
2. Retrofit your assignment 1 pages to use this new infrastructure.
3. Implement the rest of the functionality.
4. Implement favorites
5. Implement the login.

Some of these activities can happen at the same time. **The data access layer will almost certainly need to be done first however.** In past years, some groups get themselves into trouble by assigning the development of the data access layer to one person, who either being a procrastinator or a weaker programmer, completes the task (if at all) too close to the deadline, which means the assignment can't realistically be finished on time. So, be sure to get an early start on the data access layer! **I would recommend everyone in the group implement at least one of the data gateway objects.**

One Final Bit of Advice

Every year, several students are unable to successfully complete this course and have to take it again. In many cases, the thing that prevents them from achieving success is a low mark on this assignment (and the next one). In many cases, someone in a group will not do the work expected of them in assignment two: this will result in a lower assignment 2 mark. The rest of the group will then decide to drop that person for the third assignment, which almost always means an extremely low mark on assignment 3 for that person, and very likely a D or F in the course. So don't be that person! Don't free ride on the work of the others in your group or let your group down by procrastinating! It is very much in your interest to participate as equally as possible on the work in this assignment.