

CSE 3101: Internet Computing II

Lab Session 8

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Semester 1, Week 13 (19th & 20th November, 2018)

1. Aims

- 1.1. Further understanding of Web applications, including client-side Web Forms (with server-side processing upon submission), server-side PHP functions, and Web Service architectures.
- 1.2. Further increased facility with the ongoing sets of concepts & techniques needed for eventual completion of the Final Project.
- 1.3. **POLICY CHANGE (REMINDER)**: Please note that henceforth **all Lab Sessions will be marked** and count as a portion of the overall Lab grade (10%). Completed labwork must be zipped into an archive (filename given later below at the end of § 2.1), and submitted to the Tutor (<pcrawford@mac.com>) by midnight Friday each week, with the Subject line: ‘CSE3101 - Lab <N> - <YourGroupName>’.

2. Tasks

2.1. Web Forms, and Service API ‘Layer’: Uploading Files; Etc.

- 2.1.1. **NOTE: This Lab is essentially just a “repeat” of the previous Lab 07, except that the functionality is now being tested within the context of (albeit an admittedly very bare-bones version of) a complete UoG CS Dept. prototype website.**
- 2.1.2. Please try to ensure that your xAMP[P] stack includes a modern version of PHP at least \geq v5.4.0 (e.g., in XAMPP, by navigating to ‘localhost/dashboard’, and then clicking ‘PHPInfo’ in the top bar). This will help to avoid any “missing-feature” errors such as those related to the relatively recent ‘`http_response_code()`’ function. {It might end up being necessary for the Tutor or Lecturer to make formal upgrade requests to the Technical staff (?).}
- 2.1.3. Download the Lab 08 Support folder archive from the tutor’s Nyanza Software website (<www.nyanzasoftware.com>) > ‘Teaching’, § ‘University of Guyana’ > ‘CSE3101: Internet Computing II’. Then, **unzip (expand)** it to obtain the ‘Lab 08 Support’ folder.
- 2.1.4. Set up the Lab 08 test database via the PhpMyAdmin console, by first creating an empty database named ‘uog_cs_prototype_db’, and then **importing** the ‘uog_cs_prototype_db.sql’ file (located in the folder extracted above).

- 2.1.5. Copy the 'uog_cs_prototype' subfolder (located in the folder extracted above) into your Apache Web Root directory (e.g., 'C:\xampp\htdocs').
- 2.1.6. Copy the 'client_files' subfolder (located in the folder extracted above) into any convenient User location on the hard drive. {Note: These files may be useful for the file-upload feature offered in some of this Lab's Web Forms.}
- 2.1.7. Exercise the Web Forms & Service API functionality (this time, all URIs should be tested directly via any Web browser, **not** a specialised web service such as Postman), and save the various **result files** as follows:

- 2.1.7.1. Navigate to 'localhost/uog_cs_prototype/site_maint/'. Note that a **login will be required**. Please follow the instructions provided in the 'UoG CS Prototype-Usage Info.pdf' document (located in the folder extracted above).

Upon successful login, you will be redirected to the Site Maintenance "Master" page, with links to all of the Category Maintenance web forms.

- 2.1.7.2. Via the **Staff Maintenance** form, create the **first** test Staff Member, by submitting (to its handler URI) the following POST data:

First Name : Test
 Last Name : Tester
 Age : 25
 Photograph : [Please select the 'Photo Test.png' file from the abovementioned 'client_files' subfolder]
 Research Portfolio : [Please select the 'Research Test.pdf' file from the abovementioned 'client_files' subfolder]

Make sure that you see the result message (at the bottom of the form): 'Staff Member was created.'

- 2.1.7.3. Open a separate browser window/tab (for convenience), and navigate to 'localhost/uog_cs_prototype/site/'. This will show the Site Display "Master" Page, with links to all of the Category (List) Pages. Then, click the **Staff** link {to retrieve all the existing Staff Members, indirectly via an internal JSON API layer}, and save the resulting HTML page (there should be just 1 entry) to a file named 'Staff_ReadViaAPI_AfterU_First.html'.
- 2.1.7.4. Click the 'Information' link in the corresponding HTML page table entry {to retrieve details for that first test Staff Member, indirectly via an internal JSON API layer}, and save the resulting HTML details page {making sure to choose the '**Web Page, complete**' or equivalent format} to a file named 'Staff_ReadViaAPI_AfterU_First_Details.html'.
- 2.1.7.5. Again via the **Staff Maintenance** form, create the **second** test Staff Member, by submitting (to its handler URI) the following POST data:

First Name : Test2
Last Name : Tester2
Age : 34
Photograph : [Please select the 'Photo Test **02**.png' file from the abovementioned 'client_files' subfolder]
Research Portfolio : [Please select the 'Research Test **02**.pdf' file from the abovementioned 'client_files' subfolder]

Make sure that you see the result message (at the bottom of the form): 'Staff Member was created.'

- 2.1.7.6. Again on the Site Display "Master" Page, (re-)click the **Staff** link — OR, just refresh an already-showing 'Staff (List)' Page — {to retrieve all the existing Staff Members, indirectly via an internal JSON API layer}, and save the resulting HTML page (there should now be 2 entries) to a file named 'Staff_ReadViaAPI_AfterU_Second.html'.
- 2.1.7.7. Click the 'Information' link in the corresponding HTML page table entry {to retrieve details for that **second** test Staff Member (note that they will actually be the **top row** again, due to the internal descending sort by creation date/time), indirectly via an internal JSON API layer}, and save the resulting HTML details page {making sure to choose the '**Web Page, complete**' or equivalent format} to a file named 'Staff_ReadViaAPI_AfterU_Second_Details.html'.
- 2.1.7.8. From the above **4 result files** — i.e.: 'Staff_ReadViaAPI_AfterU_First.html', 'Staff_ReadViaAPI_AfterU_First_Details.html', 'Staff_ReadViaAPI_AfterU_Second.html', and 'Staff_ReadViaAPI_AfterU_Second_Details.html' — along with the relevant **2 companion support folders** — e.g., for the Firefox web browser: 'Staff_ReadViaAPI_AfterU_First_Details_files', and 'Staff_ReadViaAPI_AfterU_Second_Details_files' — create a zip archive named 'CSE3101_Lab08_<YourGroupName>.zip' and submit it as described in § 1.3.

2.2. Overall Considerations

- 2.2.1. For additional information, practice and code samples, you could also explore any of various useful articles, tutorials & references available online. For instance, the **Wikipedia** site (<en.wikipedia.org>) has several detailed articles on Web Services, Web APIs, the REST architecture, etc.