DALHOUSIE UNIVERSITY
FACULTY OF COMPUTER SCIENCE

CSCI 4177/5709 — Advanced Topics in Web Development

Assignment 2

Overview

In CSCI 5709, 30% of your grade involves work done for assignments. These assignments are meant to put the skills and theory you have learned in lectures and tutorials, along with the skills you had prior to joining the course, to practice. Most assignments may be considered to be individual deliverables that can be used towards your group project, although together they do not make up 100% of your group project. As such, it is strongly recommended for you to manage your time appropriately and use the assignments component of this course as an outlet for you to try out ideas you may be interested on using for your project. Furthermore, while **assignments** can be used towards your group project, they are meant to reflect the students' individual work, and therefore **are NOT to be carried out in groups**; though you may consult with group project members or classmates and TAs during lab/tutorial sessions.

There are a total of THREE (3) assignments in this course. Although, initially the assignments are not too difficult, they do get progressively harder as you learn new concepts and techniques covered in the course. As such, do keep this in mind when managing your time. **Assignments are due by the END OF DAY (i.e., 11:59PM) on the date noted on each individual handout, and must be submitted through both Brightspace and Git Lab unless otherwise specified on the assignment handout**. Finally, students should also be aware that they will be tested on topics included in each of the THREE (3) assignments, in addition to material covered in the course lectures, tutorials, and in-class discussions and activities.

It also goes without saying that any instance of **academic dishonesty** will be reported. **If you decide to use and modify any existing code, e.g., code found on online or printed sources or code used during in-class/tutorial examples, you are expected to provide author attribution in your code comments, along with a README.txt file providing an explanation of why the piece of code is necessary for your work, where, how and why the code or section of code was modified.**

Descriptions of the assignments are posted in advance so that you are aware of what is expected in each assignment, and are able to manage your time appropriately as **assignment due dates will NOT have any extensions. You are NOT expected to submit all assignments at the same time – each assignment has its own due date**.

Any late changes (if necessary) made to this document or any of the assignments will be notified in class and via email.

Purpose. The purpose of these assignments are to test your comprehension of the various concepts discussed in class, and your ability to apply them to solve a given problem.

Grades. Each deliverable will be graded out of 100 points, and will be scaled to 10, and 20 points for the project report, and demo of the prototyped application, respectively.

Software / Code Editors. Coded deliverables must be completed **without** the aid of "visual" website generating software. This includes desktop programs such as Dreamweaver or web based programs such as Wix. You can use tools such as Notepad++ / Vi / Vim / Sublime Text, Visual Studio Code, etc.

Submission. All deliverables must be submitted on Brightspace (**https://dal.brightspace.com**) and Git Lab (**https://git.cs.dal.ca**).

Late Submission Policy. Late assignments are **not** accepted. However, no penalty will be assessed for assignments that are late due to documented situations (See Syllabus).

Academic Integrity. Dalhousie academic integrity policy applies to all submissions in this course. You are expected to submit your own work. Please refer to and understand the academic integrity policy, available at: **http://www.dal.ca/dept/university_secretariat/academic-integrity.html**

Content for the website. Do not copy and paste content from any websites into your prototype application. You will have to create your own content to include on your website.

Assignment 2

Due Date: Jul 3
[8% Individual Deliverable]

Assignment 2 focuses on planning the front-end and back-end functionality of an application. In particular, this assignment requires for you to consider the application of back-end development techniques, approaches, and APIs, for defining the functionality of a web application based on a given set of requirements. More specifically, in this assignment you will be planning for the back-end functionality of ONE (1) feature required for your group project. **You are encouraged to coordinate the features you will be planning for with members of your group, as each member is expected to focus their assignment on different features.**

As part of this assignment, you will also have to provide justifications for the choices you make, e.g., Back-End Frameworks or APIs used, Information Architecture, Data Management methods, data format used, process workflows, etc. Finally, it goes without saying that any instance of **academic dishonesty** will be reported. As such, make sure you cite any external work or sources throughout your assignment.

Learning Objectives:

1. To assess the application of suitable Back-End APIs and Frameworks for the purpose of developing a prototype application, given a set of proposed guidelines (e.g., wireframes, devices, expected functionality).

2. To coordinate with group members the work allocation required for this assignment submission.

3. To compare different development techniques, approaches, APIs, workflows, etc. in order to judge their suitability for the development of a specific web application given a set of application requirements.

Requirements:

For your Assignment 2, you must do the following:

A2.1. Application Features

Meet with members of your group and **Choose ONE (1) feature** from the list of features your group defined as required features for your project (e.g., Profile Management, Permission Management, File Transfer System, Recommender System, Shopping Cart, etc) in your group project Proposal.

Note: The number of features your project is expected to have is equal to 'Group Members x 2' (i.e., if your group is made up of 5 members, you are expected to have 10 features). You will be expected to have ~65% of these features developed by your final report, i.e., if you are a group of 5 member then your group is expected to have approximately 6 to 7 features completed. Additionally, each group member is expected to choose a different feature. You are strongly advised communicate with any group member who may be working on a related feature (e.g., Profile Management and Shopping Cart).

Remember, a feature is defined as a group of related task for a particular overall purpose. For example, a student choosing the User Profile Management feature implies the student is expected to plan for the following tasks: user registration, user login, view user profile, update user profile, forgot password, user logout, delete user account.

A2.2. For the ONE (1) feature you have chosen, provide the following:

- **Application Details:** A brief description of your application, including the following information for your application:
  - **Target User Insight:** A short description of your *target user base* (i.e., students, professionals, developers, age range, location), assumptions on why users would use this particular application, a description of any **requirements or prerequisites** that users must fulfil or have in order to be able to use your application's features (i.e., specific knowledge, device, required training).
  - **User-Centered Design Approach:** Explain how your *user insights* were taken into consideration or used in the *design and development approach* for your application's features (i.e., Information Architecture, design and layout, task flow).

Note: Ensure you provide justifications for your design decisions. As previously mentioned, you are welcomed to use any material you may find useful from a previous assignment, but you are encouraged to address any issues mentioned in that assignment's feedback.

- **Application Workflow:** Describe the application *workflow* for your project in regards to your interaction design approach to describe the front-end of your application, as well as the back-end processes and/or services in your application:
    - **Interaction Design:** A description of how your front-end is meant to work. How are processes triggered and handled?
      Provide graphs or figures that illustrate how the backend of your application *processes and services* work (i.e., click streams, user task flow diagrams). A completed *use case* for each of the features you have chosen for this assignment, your use cases must include both normal and alternate flows. Use cases must also define the scenario relevant to the specific use cases as well as identify any user personas for whom the application is intended.
    - **Process and Service Workflow:** a description of how your back-end (in regards to the ONE feature you have chosen) is meant to work. How are processes triggered and handled? Provide graphs or figures that illustrate how the backend of your application processes and services work (e.g., workflow diagrams). A diagram detailing the expected file and folder structure for your intended features.

Note: Ensure you provide justifications for your design decisions. You are essentially expected to explain how the back-end of your application (e.g., Process Workflows) is meant to or expected to support the front-end of your application (e.g., Task Flow Diagrams) as defined in your project proposal.

Marking Rubric

The following grading criteria will be used for marking your assignment:

Dimensions	Does Not Meet Expectations	Meets Expectations	Exceeds Expectations
Formal Writing (10%)	Fails to use formal writing style, uses a lot of abbreviations (e.g., don't, can't). Makes excessive use of slang (e.g., bro, dude, huge, lots, vibe, thingy, stuff). **(1 - 3 points)**	Uses mostly a formal writing style with minimal use of slang (i.e., < 6) or abbreviations. **(4 - 7 points)**	Uses formal writing style with **no** use of slang or abbreviations. **(8 - 10 points)**
References (10%)	Fails to reference sources using in-text citations, or does not use proper in-text citations (e.g., instead uses "In the first article"). Inconsistent citation style (e.g., sources are in IEEE and ACM in the document). **(1 - 3 points)**	A single citation style is used consistently with minimal errors (i.e., < 6). Most sources are referenced throughout the text with few missing in-text citations (i.e., < 6). Most sources correctly included in the References section. **(4 - 7 points)**	Citation style is used consistently with minimal or no errors (i.e., < 1). All sources are referenced throughout the text with minimal missing in-text citations (i.e., < 1). All sources correctly included in the References section. **(8 - 10 points)**
Grammar (10%)	Poor grammar and sentence structure. Paragraphs are poorly structured, causing a lack of flow from paragraph to paragraph. Poor document navigation and readability (i.e., mistakes are numerous and distracting). **(1 - 3 points)**	Relatively good grammar and sentence structure. Paragraphs are generally well structured. Document navigation and readability is relatively easy (i.e., mistakes are not distracting, nor do they hurt readability). **(4 - 7 points)**	Great grammar and sentence structure. Paragraphs are well structured. Document is easy to navigate and read through (i.e.,< 1 mistakes). **(8 - 10 points)**
Content (30%)	Excessive lack of detail leading to vague sentences. Content is hard to follow due to missing details. Figures not correctly captioned and/or referenced within the text (e.g., 'As shown on Figure 2,…'). **(1 - 10 points)**	Some vague sentences and missing details. It is relatively possible to follow the content despite missing details. Most figures correctly captioned and referenced. **(16 - 20 points)**	No vague sentences or minimal missing details (i.e., < 4). Reader is able to follow the content with ease. Figures are correctly captioned and referenced within the text. **(24 - 30 points)**
Completeness (30%)	Sections left blank. Paragraphs/sentences end midway (i.e., incomplete). Did not follow the template provided in class for the deliverable. Writer does not clearly state the project's purpose, target user base, scenarios, use cases, task flows, sitemap, prototype, user personas. The reader is not referred to any Figures and/or they do not have a proper description provided within the text. **(1 - 10 points)**	Sections seem to be mostly complete. Mostly followed the template provided in class for the deliverable. Writer somewhat states the overall project purpose/goals, target user base, scenarios, use cases, task flows, sitemap, prototype, user personas. The reader is referred to some Figures and/or some do not have a proper description provided within the text. **(16 - 20 points)**	All sections completed, used the template provided in class for the deliverable. Project purpose/goals, target user base, scenarios, use cases, task flows, sitemap, prototype, user personas are clearly stated, meeting the expectations of the deliverable. The reader is referred to ALL Figures and ALL Figures have a proper description provided. **(24 - 30 points)**
Clarity (10%)	Sections lack clarity (i.e., issues are distracting). Document is confusing and time-consuming to read. The overall writer's message is unclear. Not clear what the overall project is about. Unclear what the issue at hand is, or the importance of the project. Sequence of design/development approach is confusing. **(1 - 3 points)**		Document is easily readable, minimal to no structure issues.The content provided in sections is clear.The reader knows exactly what the writer's message is. It is clear what the overall project is about. It is clear what the issue at hand is, and the importance of the project. Sequence of design/development approach is clear and sensible. **(8 - 10 points)**

Submission Guidelines

Your assignment must be submitted through **Brightspace**.

To submit your work to Brightspace:

- Include your answers to A2.1, and A2.2, in a single PDF file. Your submission must match naming conventions specified in the Course Syllabus (**A2_LastName_FirstName.pdf**). **Submit this file as your assignment on Brightspace**.

  Note: Any deliverable not submitted as a PDF file will have a 5% grade deduction. Any deliverable submitted without following the proper file naming convention will have an additional 5% grade deduction.

Academic Integrity[1]

At Dalhousie University, we respect the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, adherence to the values of academic integrity and related policies is a requirement of being part of the academic community at Dalhousie University.

What does academic integrity mean?

Academic integrity means being honest in the fulfillment of your academic responsibilities thus establishing mutual trust. Fairness is essential to the interactions of the academic community and is achieved through respect for the opinions and ideas of others. Violations of intellectual honesty are offensive to the entire academic community, not just to the individual faculty member and students in whose class an offence occurs. (See Intellectual Honesty section of University Calendar)

How can you achieve academic integrity?

- Make sure you understand Dalhousie's policies on academic integrity.
- Give appropriate credit to the sources used in your assignment such as written or oral work, computer codes/programs, artistic or architectural works, scientific projects, performances, web page designs, graphical representations, diagrams, videos, and images. Use RefWorks to keep track of your research and edit and format bibliographies in the citation style required by the instructor (See http://www.library.dal.ca/How/RefWorks).
- Do not download the work of another from the Internet and submit it as your own.
- Do not submit work that has been completed through collaboration or previously submitted for another assignment without permission from your instructor.
- Do not write an examination or test for someone else.
- Do not falsify data or lab results.

These examples should be considered only as a guide and not an exhaustive list.

What will happen if an allegation of an academic offence is made against you?

I am required to report a suspected offence. The full process is outlined in the Discipline flow chart, which can be found at: http://academicintegrity.dal.ca/Files/AcademicDisciplineProcess.pdf and includes the following:

1. Each Faculty has an Academic Integrity Officer (AIO) who receives allegations from instructors.
2. The AIO decides whether to proceed with the allegation and you will be notified of the process.
3. If the case proceeds, you will receive an INC (incomplete) grade until the matter is resolved.

[1] Based on the sample statement provided at http://academicintegrity.dal.ca.

4. If you are found guilty of an academic offence, a penalty will be assigned ranging from a warning to a suspension or expulsion from the University and can include a notation on your transcript, failure of the assignment or failure of the course. All penalties are academic in nature.

Where can you turn for help?

- If you are ever unsure about ANYTHING, contact myself.
- The Academic Integrity website (http://academicintegrity.dal.ca) has links to policies, definitions, online tutorials, tips on citing and paraphrasing.
- The Writing Center provides assistance with proofreading, writing styles, citations.
- Dalhousie Libraries have workshops, online tutorials, citation guides, Assignment Calculator, RefWorks, etc.
- The Dalhousie Student Advocacy Service assists students with academic appeals and student discipline procedures.
- The Senate Office provides links to a list of Academic Integrity Officers, discipline flow chart, and Senate Discipline Committee.