# SENG2040 Network Application Development

## Full-Stack Frameworks Assignment

Individual Assignment.  
Please read carefully.

## Goals

Expand on our investigation into network applications to create a fully functional web application using a web development framework.

## Background

Web frameworks have evolved to the point that application development often involves multiple programming languages. There are several web development frameworks and libraries in each language that serve the purpose of making the application development process even easier. Regardless of the language, there are often similar sets of features in all frameworks but sometimes the frameworks have different philosophies.

This assignment allows us to explore building our first moderately complex web application using Python as our server-side programming language and Django as the corresponding web framework. We will be using vanilla (raw) Javascript for the front end.

We briefly describe Javascript, Python, and Django.

### Python

[Python](https://en.wikipedia.org/wiki/Python_(programming_language)) is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

[**Django**](https://en.wikipedia.org/wiki/Django_(web_framework)) is a well-[documented](https://docs.djangoproject.com/en/4.1/contents/) free and open-source, Python-based web framework that follows the model–template–views (MTV) architectural pattern.

The Django with Javascript and Ajax course on O'Reilly teaches the essential components of Django and in the process, walks us through the steps to create a nice-looking forum application.

Access the course here:   
<https://learning.oreilly.com/videos/django-with-javascript/9781801816199/>

### Javascript

[JavaScript](https://en.wikipedia.org/wiki/JavaScript), often abbreviated as JS, is a programming language that is one of the core technologies of the World Wide Web. Most websites use JavaScript on the client side. In fact, all major web browsers have a dedicated JavaScript engine to execute the code on users' devices.

Today, [**React**](https://en.wikipedia.org/wiki/React_(JavaScript_library)), [**Vue.JS**](https://en.wikipedia.org/wiki/Vue.js) and [**Angular**](https://en.wikipedia.org/wiki/Angular_(web_framework)) are the leading Javascript front end libraries that developers use to make building complex front-ends.

Beyond web browsers, Javascript is also used in desktop apps and servers. [Electron](https://en.wikipedia.org/wiki/Electron_(software_framework)) is the framework of choice when building desktop applications using Javascript while [Node.js](https://en.wikipedia.org/wiki/Node.js) is a javascript backend runtime environment. The most popular server-side web development framework used in Node.js is [Express.js](https://en.wikipedia.org/wiki/Express.js).

## Sections

### Complete the course

Completing the entire course and demonstrating the web application you built as a result, will make you eligible for a *maximum grade of A*. You may still lose marks for missing pieces and/or bugs.  
If you complete the course, you would have effectively created a “useful” web application. This is a great demonstration project and it can form the basis of future projects.

### Go beyond the course

Extending the web application built as part of the course in any way (eg. adding an extra feature, functionality, or unit tests) makes you eligible for a *maximum grade of A+*. You may still lose marks for missing pieces and/or bugs.

## What to Submit

Please submit exactly three items to the eConestoga assignment folder.

1. A git bundle of your web application, created and named as was done for Assignment 1.
2. A PDF including the information specified later in this document.
3. A video recording demonstrating accessing your web application from a browser running on a different machine.

## Requirements

1. You must use git in the process of completing this assignment. (You will have to submit a git commit history as well as a bundle).
2. You must push to GitHub regularly.
3. You will follow a course to develop a full-stack network application. You may choose how many parts of the tutorial you complete as outlined above.
4. The final web application must be accessed from a browser running on a different machine. If you do not demonstrate this, you will lose a full letter grade. You are free to use the VPN to enable public access to your running application.

## Document

Please use (and complete) the template at the end of this specification for your submitted document.

## Please Note

No part of this is a small task – you cannot leave it for the last minute.

Your commit history is a key part of this assignment; it is expected that you have a full commit history, not just a single binge of programming. If your commit history shows you left this assignment to the last minute, your grade will be reduced.

## Demonstration

You are expected to record a <10-minute video of your solution in action as your demonstration and include this video in your submission for the assignment.

During the demonstration, you should clearly illustrate all the capabilities of your software. Call out the features you implemented from the tutorial and if you added extra functionality or capabilities beyond the tutorial, highlight them.

You must demonstrate this assignment in person to receive a grade.

If you have followed the tutorial accurately, demonstrations will be very quick. If there is an issue with your working code (crashes, 404 errors, etc.) they will be noted.

It is highly recommended that you follow the tutorial precisely; skipping steps may make it very difficult to correct problems.

## Evaluation

Your assignment will be evaluated on a letter grade scale. You will be evaluated on:

* Completeness
* Functionality
* Meaningful commit history
* Accuracy
* Bug free operation

The following is a guideline for the letter grade evaluation that will be used.

|  |  |  |
| --- | --- | --- |
| Letter Grade | Achievement | Description |
| A+ | Exceptional | Thorough demonstration of concepts and/or techniques and exceptional skill or great originality in the use of those concepts/techniques in satisfying requirements. |
| A | Excellent | Thorough demonstration of concepts and/or techniques together with a high degree of skill and/or some elements of originality in satisfying requirements. |
| B+ | Very Good | Thorough demonstration of concepts and/or techniques together with a fairly high degree of skill in the use of those concepts/techniques in satisfying requirements. |
| B | Good | Good level of demonstration of concepts and/or techniques together with considerable skill in using them to satisfy requirements. |
| C+ | Competent | Acceptable demonstration of concepts and/or techniques together with considerable skill in using them to satisfy requirements. |
| C | Adequate | Acceptable demonstration of concepts and/or techniques together with some skill in using them to satisfy requirements. |
| D | Barely Passing | Minimum demonstration of concepts and/or techniques needed to satisfy requirements. |
| F | Unacceptable |  |

# Electronic Submission and File Naming

Often, multiple groups will name their assignment files assignment1.zip (or some other common combination) which results in confusion and complications when downloading and unzipping submitted electronic files.

Please follow the following guidelines for all submissions this term. Failure to follow the electronic submission guidelines may result in *a 10% penalty per infraction*.

As long as other file naming conventions are followed, you may choose to append an assignment identifier (i.e. “\_a1” or something else as appropriate) as the **last** element before the file extension.

## Document Naming and Submission

Unless otherwise requested, you should only ever submit a single document containing the complete document as specified. This document must be:

* A professionally formatted document adhering to the SET report standard
* A single PDF file, **not** included in a zip

Unless indicated otherwise, do not submit the assignment specification as a part of your document.

Documents should be named with the usernames of all team members as follows:

* Individual assignments: username1234.pdf (i.e. jsmith2345.pdf)
* When working alone: username1234\_alone.pdf (i.e. jsmith1234\_alone.pdf)
* When working with a partner: username1235\_username5678.pdf (i.e. jsmith1234\_bjones5678.pdf)
* When working as a team: username1234\_team.pdf (i.e. jsmith1234\_team.pdf – but be certain to include all team members on report title page)

## Zipped Source Code

Unless otherwise requested, you should only ever submit a single zip file containing the source code as specified. Your source code must always be contained **within** a top-level folder named correctly so that when it is extracted, it does not lose naming information.

The top-level directory should be named with the usernames of all team members as follows:

* Individual assignments: username1234\_src.zip (i.e. jsmith1234\_src.zip)
* When working alone: username1234\_src\_alone.zip (i.e. jsmith1234\_src\_alone.zip)
* When working with a partner: username1234\_username5678\_src.zip (i.e. jsmith1234\_bjones5678\_src.zip)
* When working as a team: username1234\_src\_team.zip (i.e. jsmith1234\_src\_team.zip – but be certain to include all team members in every code header)

Place your **cleaned** project file(s) and/or folder(s) inside this correctly named top-level directory before zipping your files.

# SENG2040 Frameworks Assignment

<< Your registered name here >>

## Completed Parts / Assignment Weighting

<< Please state clearly how many parts you have chosen to complete, as outlined in the “Sections” portion of this specification. >>

## Application URL [Optional]

<< Please put a link to your final deployed app here. Ensure it is clickable and working over the VPN so that it may be tested. >>

## GitHub Repository URL

<< Please put a link to your final GitHub repository here >>

## Output of Git Log Command

<< Please paste the complete output of calling the command git log when you have completed your assignment. This may span multiple pages – ensure you include all of it. Please delete the example shown below.>>

commit 338cd56fc3b744ab5931061b3f467d09f422f801 (HEAD -> master, origin/master, origin/HEAD)  
Author: briandunnington <briandunnington@gmail.com>  
Date: Sat Nov 3 14:45:58 2018 -0700  
  
 Create README  
  
commit 6a4ba006eae20fd9b454b4b6d0fbd1cb87bb279b (tag: github-import, tag: final)  
Author: brian dunnington <briandunnington@gmail.com>  
Date: Sun Mar 15 16:51:04 2015 -0700  
  
 cleanup after export to GitHub  
  
commit 2bcdd004c99c701df24ed2af83aa4d9399764c73  
Author: briandunnington <briandunnington@1e52b63b-b251-0410-a6bd-efb3cb96b38b>  
Date: Tue Aug 21 22:50:53 2012 +0000  
  
 expanded width of title & text display fields in Visor display so that all text was not bunched up in the left corner on very wide screens