

# Web Development Using Application Frameworks

## Coding Assignment: Authentication and Authorization

### Instructions

#### Overview

The Authentication and Authorization coding assignment is the next in a series of assignments in which we will be developing the EZU database system, a full C-R-U-D database application for simplified university record keeping. In this assignment, we add login and logout functionality; create users, user groups and permissions; and restrict access within most parts of our application to authorized users.

#### Tools

I am expecting you to use the tools that are demonstrated in the tutorial videos: Anaconda and PyCharm.

#### Tool Versions

In the current semester, I am expecting you to use Python 3.8 and Django 3.1.

#### Tutorial Parts

This is a 3-part tutorial.

#### Part 1 – Add Login/Logout Functionality

In this part of the tutorial, we work together to add login/logout functionality to our *courseinfo* app. The following is a list of activities conducted in this part:

1. Add urlpattern and template for login
2. Add LOGIN\_REDIRECT\_URL to settings.py
3. Add urlpattern for logout
4. Add LOGOUT\_REDIRECT\_URL to settings.py
5. Test login/logout using admin pages
6. Add markup for login/logout to base.html
7. Test finished version of login/logout

Files needed for this part of the tutorial are provided in:

- starter\_files\_for\_ezu\_authentication\_and\_authorization\_part\_1.zip

## Part 2 – Create Groups, Users and Permissions

In this part of the tutorial, we work together to create user groups, users, and permissions. The following is a list of activities conducted in this part:

1. Do migration for create groups (see starter file)
2. Create users by hand using Admin app
3. Do migration for create group permissions (see starter file)
4. Explore user powers in Admin app and Courseinfo App.

Files needed for this part of the tutorial are provided in:

- starter\_files\_for\_ezu\_authentication\_and\_authorization\_part\_2.zip

## Part 3 – Modify Courseinfo App to Enforce Permission Scheme

In this part of the tutorial, we work together to make modifications to the EZU project that enforce previously created login and permission rules. The following is a list of activities conducted in this part:

1. Add LoginRequiredMixin and PermissionRequiredMixin to all class-based views.
2. Add permission\_required = 'courseinfo.xxxxxx\_yyyyyyyyyy' code to each class-based view header.
3. In urls.py, confirm that the pattern that redirects the root url redirects to the about\_urlpattern.
4. In settings.py, confirm setting of LOGIN\_REDIRECT\_URL to about\_urlpattern.
5. In settings.py, set LOGIN\_URL to reverse\_lazy('login\_urlpattern').
6. In settings.py, add SESSION\_EXPIRE\_AT\_BROWSER\_CLOSE = True.
7. Test the app. Observe that UI options are still shown even when they cause 403 Forbidden.
8. Replace base.html template with new version that hides navigation links (see starter files).
9. Replace all \_list.html and \_detail.html templates with new version that hides links and buttons in the UI for unauthorized users (see starter files).
10. Test the app. Observe that UI options are shown to users only when they are authorized.

Files needed for this part of the tutorial are provided in:

- starter\_files\_for\_ezu\_authentication\_and\_authorization\_part\_3.zip

## Code Deliverables

You are expected to submit a properly organized PyCharm Django project that is ready to be tested using PyCharm. Please refer to my tutorial video for details.

## Non-Code Deliverables

Please be sure that the project you submit includes the following:

1. A test user (username = “tester”, password = “(secret)”
2. Sufficient test data present in the database to allow for testing all functions

## Submission Method

Follow the process that I demonstrated in the tutorial video on submitting your work. This involves:

- Locating the properly named directory associated with your project in the file system.
- Compressing that directory into a single .ZIP file using a utility program.
- Submitting the properly named zip file to the submission activity for this assignment.

## File and Directory Naming

Please use the following naming scheme for naming your PyCharm project:

**surname\_givenname\_ezu**

If this were my own project, I would name my PyCharm project as follows:

**trainor\_kevin\_ezu**

Use a zip utility to create one zip file that contain the PyCharm project directory. The zip file should be named according to the following scheme:

**surname\_givenname\_ezu.zip**

If this were my own project, I would name the zip file as follows:

**trainor\_kevin\_ezu.zip**

**PLEASE NOTE: All file and directory names must be in lower case. Deductions will be made for submissions that do not conform to this standard.**

## Due Date

Please see the Weekly Schedule for the date and time when this assignment is due.

Last Revised

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