

Instructions:

- Note that the artifacts that you create in this project will be re-used and refined in subsequent assignments in this course.
 - **Note:** You are responsible for reviewing, complete testing, and final submission.
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Background:

In this first project, you will create a presentation and persistence tier within a Java EE web application to display information from Canada Census DB. In subsequent assignments you will replace the persistence layer with a JPA implementation and introduce a business logic layer implemented as Java Enterprise Beans.

Questions:**Presentation Layer:**

Utilize JSP pages, along with Java servlets, to display the following information:

1. Geographic Area Classification List: The geographic areas in Canada are divided into a hierarchy. The Geographic Area level attribute denotes the hierarchy level that a given area belongs to:
 - a) 0 - The country of Canada
 - b) 1 - Provinces and Territories
 - c) 2 - Census metropolitan areas (CMA) and census agglomerations (CA)
 - d) 3 - One CMA and three CAs are divided between adjacent provinces. A value equal to 3 signifies that this unit is one provincial part of a larger area.

For each classification, list the names of all geographic areas that belong to that hierarchy level.

2. Individual Geographic Area Details Page: For a given geographic area, display its name, code, level, and total population as reported on the 2021 Canada Census.
3. Age List: For a given 2016 and 2021 Canada Census year Canada-wide population separated by male and female.

Note: It is up to you to decide how to best display this information. For example, you may decide that the initial page shows the entire list of geographic areas. Alternatively, you might decide to show the level names of the geographic area hierarchy and use specific menus to navigate through the information. You may use JSP tags syntax for specific data elements.

4. Style: Apply CSS to your web application to achieve a professional-looking website with appropriate formatting and well-thought-out menus.

Persistence Layer:

Use native SQL queries via JDBC to implement a Data Access Object (DAO) layer. Utilize Java Beans for the persistence layer to insulate it as much as possible from your presentation tier's JSP pages. Your data access layer only needs to handle reading from the database. No updates, inserts, or deletes to the database are required at this time.

Database Connection:

Utilize a single database connection to the MySQL server for your application to ensure transactional consistency.

User Authentication:

Ensure that your application prompts the user for a username and password to access the MySQL database.

Add Comments to your code.

Submission:

1. Be sure to save all changes.
2. Zip the ENTIRE project folder with your solution and upload to the Assignment 1 folder to the eConestoga Portal.

Note: You can submit multiple times if you want. Please mention in comments which submission to evaluate. Also note that if you resubmit after the due date, late penalties apply as per your Program Handbook.