**SENECA POLYTECHNIC**

**FACULTY OF CONTINUING EDUCATION**

**FINAL EXAMINATION- 2251**

**SUBJECT NAME: WEB PROGRAMMING TOOLS AND FRAMEWORKS**

**SUBJECT CODE: WEB322V1A**

**EXAMINATION DATE: APRIL 15th, 2025**

**INSTRUCTOR NAME: GEORGE TSANG**

**TIME ALLOTTED: 3.0 HOURS**

**MARKS ALLOTED: 100**

**WEIGHTING: 30%**

**SPECIAL INSTRUCTIONS:**

Exam Aids: Permitted: X Not Permitted:

Approved by:

Sheri Ladoucier

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Sheri Ladoucier, Academic Program Manager

**Academic Policy Section 9:**

**Engaging in any form of academic dishonesty to obtain any type of advantage or credit is an offence and will not be tolerated by the College. Such offences under this policy include, but are not limited to, cheating, plagiarism, falsification, impersonation, misrepresentation and procurement.**

Question 1 of 1

Mini Project – Cars

You are required to create a web server program presenting cars sold by the country and brand in a calendar year.

### Assignment Specifications

Your Node/Express/Handlebars/MongoDB or Mongoose/JSON deliverable must address the following:

MongoDB Database/Collections/Documents

* A collection named **cars** with documents is available on my MongoDB Atlas database with the following setup:

A screenshot of a computer

Description automatically generated

* The URI to the MongoDB Atlas database is

"mongodb+srv://george\_tsang:At00las%24@mongodbatlas-gua4x.mongodb.net/mongodatabase?retryWrites=true"

* Each document is composed of three fields/columns: **brand** (String), **country** (String) and **sold** (Number)
* The **brand** field contains the name of car manufacturers
* The **country** field contains these manufacturers’ country of origin
* The **sold** field contains the number of cars sold by individual manufacturers in a calendar year
* The above data are to be tabulated, totalled, formatted, and presented on your webpage
* Changing the layout and structure of **cars** collection is prohibited
* None of the values stored in the **cars** collection may be hardcoded, that is, you may not hard code country names such as **Germany** or **Japan**, and you may not hard code **Brand** names such as **Audi** or **Tesla**

Webpage

* An example of the webpage when first loaded is as follows

A screenshot of a computer

AI-generated content may be incorrect.

* The country names found in the **Cars** collection are to be displayed in reverse alphabetical order with accompanying radio buttons
* You are not to display the same country name more than once
* A disabled submit button is to be displayed under the list of country names
* Note that the **Cars** collection may contain any number of documents with different brands and country names

A screenshot of a computer

AI-generated content may be incorrect.

* The submit button is to be enabled when any of the radio button is selected
* The selection of the submit button will result in the sending of a request message containing the value of the chosen radio button to your webserver program
* Your webserver program is then responsible in compiling a list of brands originating from the same country before sending the response message with all the information shown in the next screenshot

**A screenshot of a car sales report

AI-generated content may be incorrect.**

* The browser is to display the webpage with
  + The selected country
  + The list of all the brands originating from the selected country ordered by their respective sales figures from the highest number to the lowest number
  + The total number of cars sold for that country

Technical Specifications

* Code one JavaScript server application using Node.js for routing, Express.js for framework and Handlebars.js for templating
* Usage of JavaScript Fetch API is prohibited
* Necessary **npm** modules are: express, express-handlebars, mongodb and/or mongoose, fs, and path

Project Requirements

* Submit your deliverables BEFORE the end of the exam
* The completed mini project is to include one **js** file, no more than one **hbs** file, one **package.json** file and other necessary files all compressed into one **zip** file
* Do not include your **node\_modules** subfolder as part of your **zip** file
* Usage of front-end framework such as React, Vue, Angular are prohibited
* Your mini project is to be submitted via Blackboard
* Ensure your assignment can be successfully tested via **127.0.0.1:3000** (i.e., DO NOT use any other port number)