

**CS 101A Homework #9**  
*Due: 12/05/2020, 9:00 pm*

- ✓ *Upload your .py file on Google Classroom using Homework 9 assignment link.*
- ✓ *I should be able to run your complete code without errors.*
- ✓ *If you get help from anyone, please, make sure that you actually understand the solution.*

**Task 1**

This task simply asks you to repeat some of the classwork.

Start by using the classwork code: create a nested list *data*. Each element of *data* is another list that consists of the following information: (1) country name (string), (2) capital (string), (3) population size in millions (integer, or float). Print all the information from the *data* list using f-strings. The output should look as follows:

“The population of Canada is 38 million people and its capital is Ottawa”.

It should NOT look like:

['Canada', 'Ottawa', 38]

**Task 2**

Ask the user if the user wants to enter information for additional countries. If the user types “quit” or “exit”, then finish and display information for all countries (as in Task 1). Otherwise, the user must type country’s name, capital, and population size in millions.

**Task 3**

Use error handling to ensure that the user enters a number for the population size. (You may want to check our previous work if you forgot how to do this). If you are not able to complete this task, skip it (do not just stop your work), and proceed to the next task.

**Task 4**

Similar to the classwork, create a list *vars* that describes the data elements (or variables) in *data*: “name”, “capital”, and “population”.

**Task 5**

Modify your *data* by adding the “area” element for each country (For Canada, Mexico, and USA the values are 3.86, 0.76, and 3.80 million square miles, respectively). Can you complete this task using a for loop instead of a manual entry of the values? (Also, make sure to update your *vars* list).

**Task 6**

Ask the user: “What would you like to know?”

The user may type their question in any way but you should still be able to provide the relevant information for the user. Hint #1: examine if any of the elements of the *vars* list are present in the user question (query). Hint #2: similarly examine if any of the country names are present in the user query. Based on the above, provide an answer to the user. If the user asks for information not present in the *data* (for example, a country that is missing or a variable that is not defined such as the country’s official language or the title of the anthem), then display a message that the information is missing.

Finally, if the user types “quit” or “exit” in their query, the program finishes by saying good-bye to the user.