

C# Programming: 1 – Winter 2020

Skill Check Lab A

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Overall Theme:

Display information about US Cities.

Project:

Create a project for the following form:

The screenshot shows a Windows application window titled "My First Form". The interface is titled "US City Information" in a black banner. It features a group box labeled "CITY" with four radio buttons: "Seattle" (selected), "New York", "Los Angeles", and "Chicago". To the right of the group box is a label "Hello, Seattle!". Below the group box is a text box labeled "Team Name" containing the text "Seahawks". To the right of the text box is a button labeled "Go, Seahawks!". Further right is a button labeled "Exit". In the center of the form is a photograph of the Space Needle in Seattle. To the right of the photograph are three checked checkboxes with their corresponding values: "Area (square miles) 142.5", "Population 724,745", and "Population Density 5,086".

Project Requirements:

1. Display a banner Label control that states "US City Information". Change the ForeColor and BackColor properties of the Label (e.g. white on black instead of the default black on white). Change the Font Size to 20.25.
2. City choices are presented as RadioButton controls within a groupBox control. There are four cities – Seattle, New York, Los Angeles and Chicago. The order is unimportant.
3. When a RadioButton is clicked, the following actions have to take place:
 - a. The label "Hello, {City}!" has to show for the corresponding {City}.

- b. An iconic image of the selected city has to be displayed in a PictureBox control. Download the images from the Canvas site within the folder "Additional Files".
- 4. More information about each city is available as the CheckBox controls "Area (square miles)", "Population" and "Population Density". When a CheckBox is checked, the information for the corresponding city is displayed, when it is unchecked, the information is hidden.
 - a. The "Area (square miles)" and "Population" values are as follows:

CITY	Area (square miles)	Population
Seattle	142.5	730400
New York	468.484	8623000
Los Angeles	502.76	3999759
Chicago	234.14	2716450

- b. "Population Density" for each city is computed as the population per square mile, i.e. $\text{Population} / \text{Area (square miles)}$.
- 5. The RadioButton (i.e. city selection) and the CheckBox controls (i.e. additional information about the city) can be selected in any order.
 - a. When no City has been selected, the CheckBox controls display no information when they are checked. The information appears when a city is selected.
 - b. When a City is selected first, no additional information is displayed until a CheckBox control has been checked.
- 6. The Label "Team Name" and the associated input TextBox control displays initial text "Enter name ". The user can input a name such as Seahawks. In response, the output label "Go, {team name}!" is displayed.
 - a. If no team name is entered, the output label should not be displayed. For example, do not show "Go, Enter name!" or "Go, !".
 - b. Do not show extra spaces around the team name such as "Go, Seahawks !").
- 7. When the Exit button is clicked using the mouse, the application will stop running. Alternatively, holding down Alt and X keys simultaneously from the keyboard terminates the application - you have use the Text value "E&xit" (without the quotes) for the Exit button to achieve this.
- 8. Once your application has met all these requirements, order the RadioButton controls for the cities from highest to lowest population density.

Good luck!