

## Assignment – 3

### PROG32356 – .NET Technologies using C#

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#### Note:

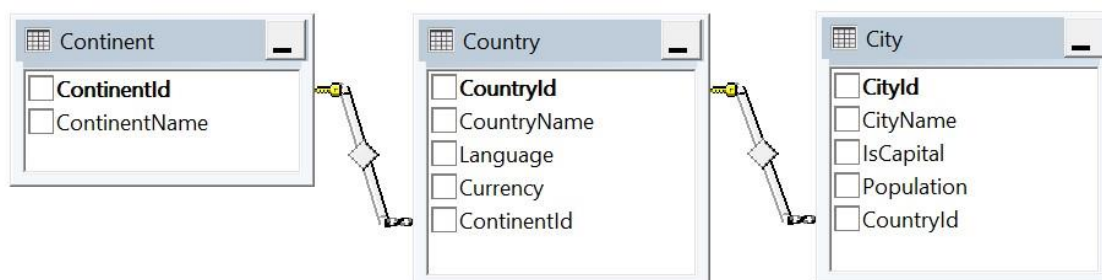
1. Assignment must be completed as an individual effort. Do not collaborate with anyone or share it with any individual, party or entity.
2. Due date for submission is specified in SLATE.
3. All online submissions will be done via SLATE (Email submissions will NOT be accepted).
4. Late assignments will be penalized 10% each day for up to 3 days. After that, it is worth 0.
5. Corrupt/incorrect submissions will be graded accordingly (depending upon how much the application is completed).
6. Please refer to the [Academic Integrity Policy](#).
7. Refer to the School of Applied Computing's Academic Procedures for Evaluations for more details regarding missed work: [Procedures for Evaluations](#).
8. If you take code-snippets from external sources such as StackOverflow, make sure to provide references to the source's webpage as comments in your code.
9. You **MUST** follow the submission instructions at the end to avoid any deductions in the marks.

#### Copyright Disclaimer:

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#### Instructions:

1. Make a **WPF App/ UWP** in Visual Studio and name it as **A3YourFirstnameLastname**.
2. The app should be able to add and display the information about continents, countries, and their cities.
3. **Download the WorldDB.sql file and use the SQL script it contains to create and populate the database.**
  - When creating a new database, it must be named **WorldDB**, otherwise, the script will not run properly.
  - Use **LocalDB** as database source, unless you've got written permission from your professor to use a different data source such as SQL Server or MDF file.
4. The following image shows the relationship between these tables:



5. You can use *connected model*, *disconnected model*, or *typed datasets* for this assignment.
6. The application should have four windows:
  - Home | Add Continent | Add Country | Add City

**Home Window:**

1. This window has:
  - **ComboBox**: to display list of continents.
  - **ListBox**: to display list of countries.
  - **Labels**: to display the selected country's most common spoken language(s) and currency.
  - **DataGrid**: to display the information of cities, of the selected country.
  - **Buttons**: three buttons to add continents, countries, and cities.
2. On the initial window load, the **ComboBox** is populated with continents.
3. On selecting a continent, its corresponding countries are loaded in the **ListBox**.
4. On selecting a country:
  - Its cities' information is loaded in the **DataGrid**.
  - Its most common spoken language(s) and currency are displayed in the **Labels**.
5. If a new country is selected in the **ListBox**, update the controls to display the country's information accordingly.
6. If a new continent is selected in the **ComboBox**, update the countries **ListBox** accordingly.
  - And clear the language and currency **Labels** and **DataGrid**.
7. On clicking one of the Add buttons, its corresponding window is displayed.
  - For example, on clicking the Add Continent button, Add Continent Window is displayed.
  - Display the Add window as a dialog box. User should not be allowed to go back to the Home window as long as the Add window is open.

**Add Continent Window:**

1. This window adds the name of the continent to the database table.
2. This window has:
  - **TextBox**: to type the continent's name.
  - **Buttons**: to add the continent's name to the database and to close the window.
  - **Label**: to display the validation message.
3. The continent's name is required. If this field is left blank, display an appropriate message in the label.
4. On closing this window, clear all the fields, and update the Continents **ComboBox** to reflect the newly added continents.

**Add Country Window:**

1. This window has:
  - a. **ComboBox**: to display list of continents.
  - b. Three **TextBoxes**: to type the country name, language, and currency.
  - c. **Buttons**: to add the above information to the database and to close the window.
  - d. **Labels**: to display the validation messages.
2. On the initial window load, the continent **ComboBox** is filled with continent names.

3. Then, the user can type the name of the country, the most common spoken language(s) and currency in the textboxes.
4. Continent and country fields must be required. If these fields are left blank, display appropriate messages in the labels.

**Add City Window:**

1. This window has:
  - a. **ComboBox**: to display list of countries.
  - b. Two **TextBoxes**: to type the name of the city and its population.
  - c. **CheckBox**: to select if this city is a capital city of the country or not.
  - d. **Buttons**: to add the above information to the database and to close the window.
  - e. **Labels**: to display the validation messages.
2. On the initial window load, the county **ComboBox** is filled with countries.
3. Then the user can type the name of the city and its population in the textboxes.
4. The user can select the **CheckBox** to mark the city as capital city.
5. Country and city name fields must be required. If these fields are left blank, display appropriate messages in the labels.

**Marks Breakdown:**

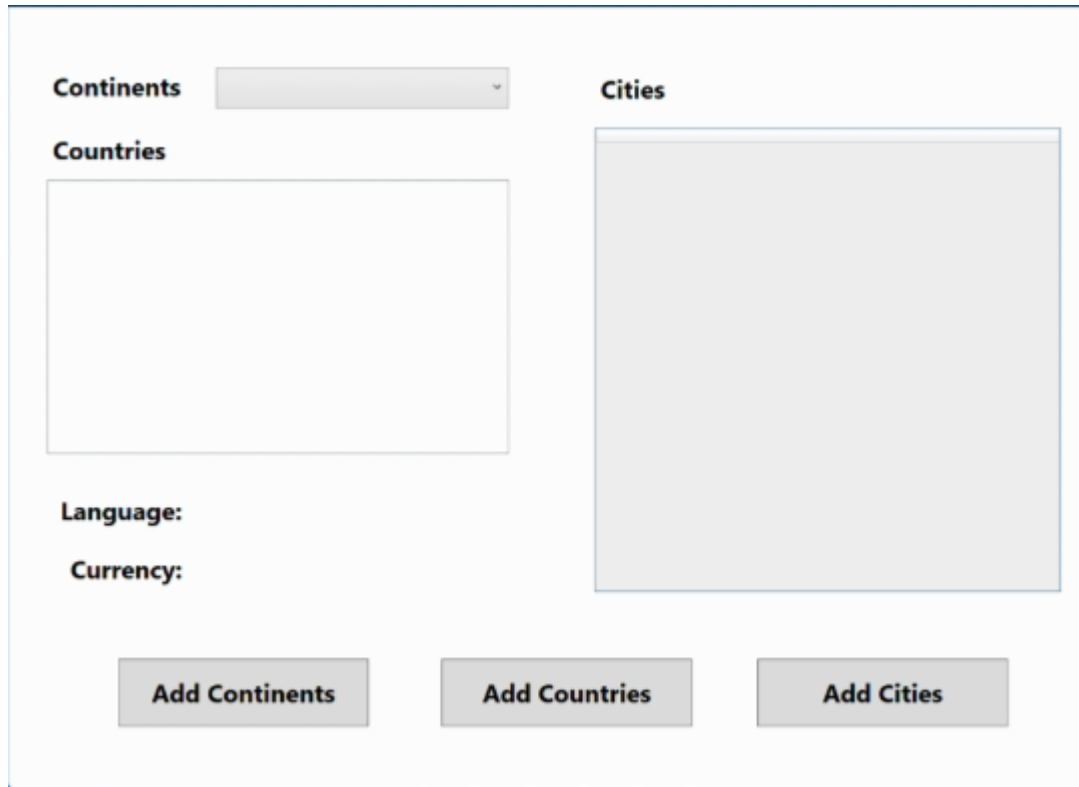
- 10% - for correct submission.
- 40% - home window.
- 10% - add continent window.
- 20% - add country window.
- 20% - add city window.

**Submission:**

1. Once done, **ZIP the entire project folder** and upload it to **Assignments** on SLATE.
  - a. **Double-check your submission by downloading it and running it.**
2. You are to submit .ZIP and .TXT files, separately:
  - a. Upload the **.ZIP** file of your assignment to SLATE.
  - b. Upload the **.TXT** files to SLATE.
3. You must copy and paste all of your source code from your C# files into plain text files.
  - a. You can copy and paste the source code into Notepad.
  - b. Create a separate .TXT file for each source code file.
  - c. No need to copy-paste the XAML code.
4. You do not have to format this code - it's used by TurnItIn (the originality checker in SLATE, which is a piece of software that checks your submission for plagiarism against other submissions in the college, in other colleges, from the web, and various other sources).
5. Submit this document in addition to your assignment ZIP file.
  - a. DO NOT add it inside your zip/rar file - it must be a separate file.
  - b. This is used for TurnItIn (it won't examine the contents of zip/rar files).

**Sample Output:**

## • Main Screen



This mockup shows the initial state of the application. It features a 'Continents' dropdown menu, an empty 'Countries' list, and a large empty 'Cities' container. Below these are labels for 'Language:' and 'Currency:', and three 'Add' buttons at the bottom.

**Continents**

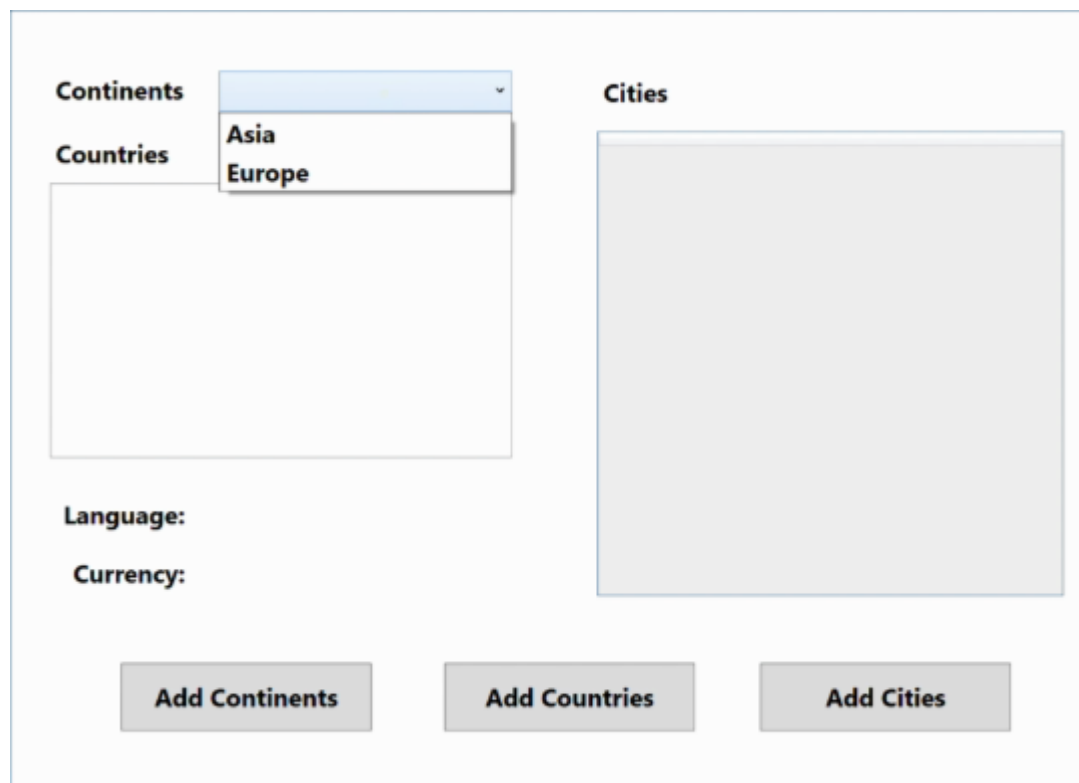
**Cities**

**Countries**

**Language:**

**Currency:**

**Add Continents** **Add Countries** **Add Cities**



This mockup shows the application after a selection. The 'Continents' dropdown is open, displaying 'Asia' and 'Europe'. The 'Countries' list remains empty, and the 'Cities' container is still empty. The 'Add' buttons remain at the bottom.

**Continents**

**Cities**

**Countries**

**Language:**

**Currency:**

**Add Continents** **Add Countries** **Add Cities**

Continents	Asia	Cities
Countries		
India		
Japan		
Pakistan		
Iran		
Language:		
Currency:		
Add Continents	Add Countries	Add Cities

Continents	Europe	Cities
Countries		
England		
France		
Germany		
Language:		
Currency:		
Add Continents	Add Countries	Add Cities

World Database

Continents: **Asia**

Cities

CityId	CityName	IsCapital	Population	CountryName
3	Tokyo	<input checked="" type="checkbox"/>	14 million	Japan
4	Osaka	<input type="checkbox"/>	19 million	Japan
5	Hiroshima	<input type="checkbox"/>	2 million	Japan
		<input type="checkbox"/>		

Countries

- India
- Japan**
- Pakistan
- Iran

Language: Japanese

Currency: Yen

Add Continents Add Countries Add Cities

- Add Continent screen

World Database

Continents: **Europe**

Cities

CityId	CityName	IsCapital	Population	CountryName

Countries

- Engl
- Fran
- Germ

Language

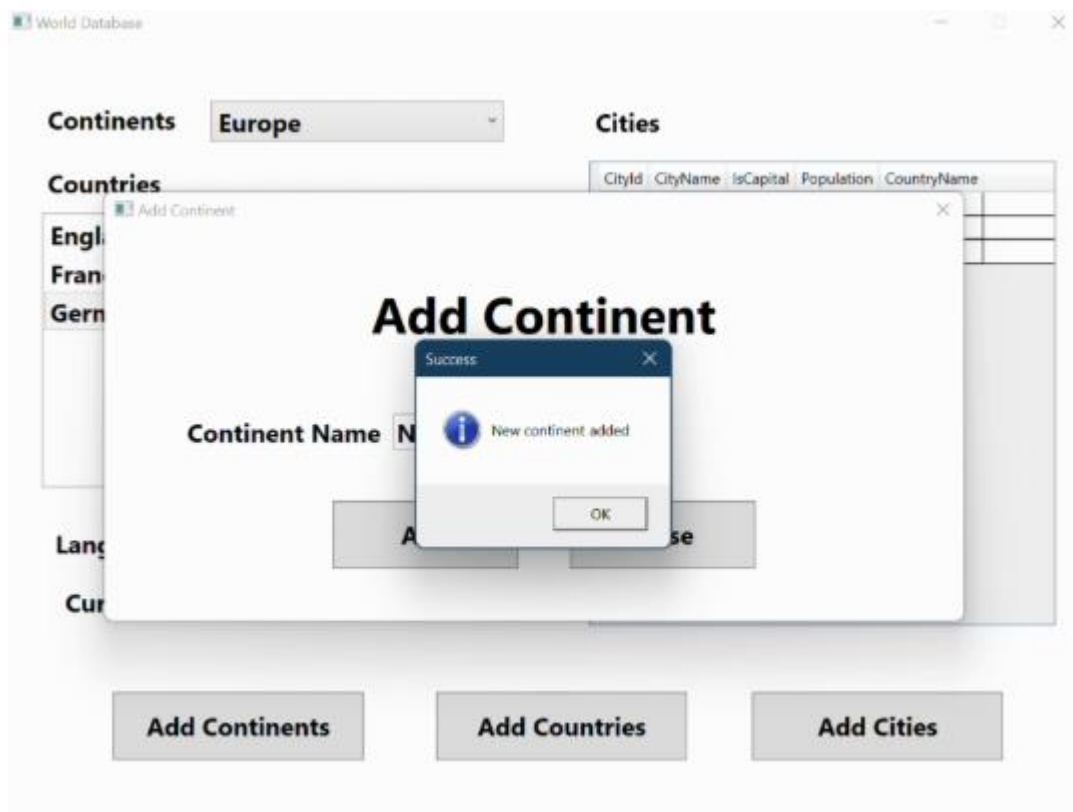
Currency

Add Continents Add Countries Add Cities

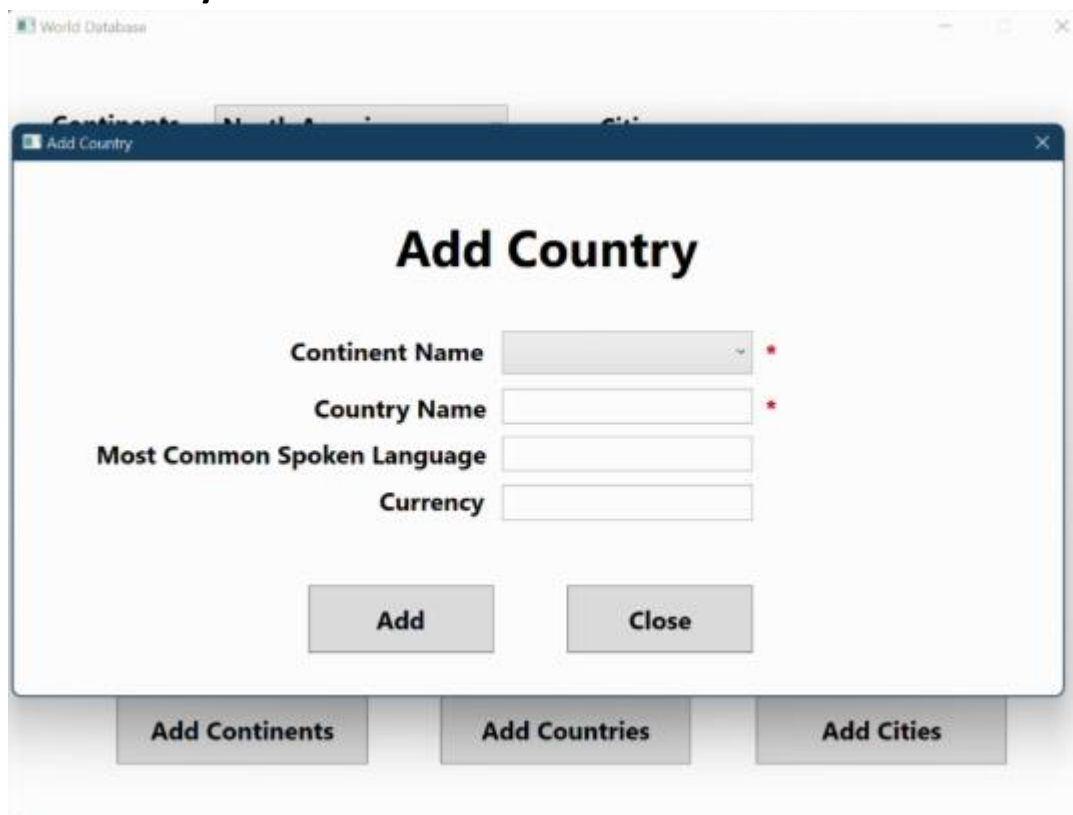
**Add Continent**

Continent Name  \*

Add Close



- Add Country



The screenshot shows a web application titled "World Database" with a modal dialog box titled "Add Country". The dialog box contains the following fields and values:

- Continent Name: North America (with a red asterisk indicating a required field)
- Country Name: Canada (with a red asterisk indicating a required field)
- Most Common Spoken Language: English, French
- Currency: Canadian Dollar

At the bottom of the dialog box are two buttons: "Add" (highlighted with a yellow circle) and "Close". Below the dialog box, there are three buttons: "Add Continents", "Add Countries", and "Add Cities".


- Add City

The screenshot shows the same "World Database" application, but with a modal dialog box titled "Add City" open. The dialog box contains the following fields and values:

- Country Name: (empty dropdown menu with a red asterisk indicating a required field)
- City Name: Japan (with a red asterisk indicating a required field)
- Population: (empty text input field)

A dropdown menu is open for the "Country Name" field, showing a list of countries: Japan, Pakistan, Iran, England, France, Germany, and Canada. The "Canada" option is highlighted in blue. At the bottom of the dialog box is a "Close" button. Below the dialog box, there are three buttons: "Add Continents", "Add Countries", and "Add Cities".



**Continents** **North America** 

**Cities**

**Countries**

**Canada**

**Language:** English, French

**Currency:** Canadian Dollar

**Add Continents**

**Add Countries**

**Add Cities**

CityId	CityName	IsCapital	Population	CountryName
16	Toronto	<input type="checkbox"/>	6 million	Canada
17	Ottawa	<input checked="" type="checkbox"/>	2 million	Canada
		<input type="checkbox"/>		