Windows Presentation Foundation
Lab No. 2

Your task for today is to prepare application for managing *Employees*.

- The *Sample Application Lab* consists of every feature that you have to implement.
- The task is divided into several stages. Additionally there is home part *Sample Application Home*.
- Completion of all stages from Lab part is a prerequisite for Home part (otherwise it will not be checked).
- You have to complete whole stage to get points for it (unless stated otherwise).

Stage 1 (3 points) – Data Loading

Set Window's Title to "Employees management". Set font size to 14. Create Menu with "File/Open file…" option. There is a file named Employees.csv that you have to load. CSV is text format with records separated by Line Endings and fields separated by Semicolons. First row is a Header and should not be treated as Data. SalaryCurrency and CompanyRole maps to provided enums. You preview the contents of CSV file in Notepad or Visual Studio.


```
Employees.csv  ⊸ ×
    1   First Name;Last Name;Sex;Birth Date;Birth Country;Salary;SalaryCurrency;CompanyRole
    2   Lenore;Hilbert;Female;14.10.1980;Romania;9900;4;0
    3   Lela;Stidham;Female;19.11.1990;Greece;6400;3;2
    4   Amber;Osterberg;Female;23.07.1986;Jersey;8800;2;1
    5   Ronni;Millsap;Female;03.01.1982;Faroe Islands;9300;1;2
    6   Lou;Bevil;Male;12.06.1993;Denmark;5200;2;1
    7   Maile;Shickey;Female;18.11.1985;Sweden;5800;4;3
```

Requirements:

- Title, font size
- Menu
- OpenFileDialog with proper file format filter (.csv files) and file data loading
- All Employees stored in a collection of any kind (you should use provided Employee class and enums)

Hint: System.IO.File.ReadAllLines method, casting int to enum

Stage 2 (5 points) - GUI

Create a Control for listing Employees. Write DataTemplate to properly display data. Create Styles to be used by Controls to make them look better (margins, alignments). Trim too long BirthCountry with Character Ellipsis. Bind Employee Properties.

Requirements:

- Listing Employees
- DataTemplate
- Styles

- Trimming BirthCountry
- Bind (with properly working Binding) to every Property of Employee class

Forbidden:

- Creation of individual ComboBoxItems for enums

Points for creating Controls, Bindings and Styling:

- 1 point – FirstName and LastName
- 2 points – SalaryCurrency and CompanyRole
- 2 points – the rest

Hint: INotifyPropertyChanged, MultiBinding, System.Enum.GetValues in a collection (C#) or via ObjectDataProvider (XAML)

Stage 3 (2 point) – Validation

Create ValidationRule for Salary with Property "MinSalary" and set it in XAML to 5000. Display Validation Error Message under Salary in red text. When there are no errors Message should collapse.

Hint: For Control collapsing use a Converter.

Stage 4 (2 point) – Data Reordering

Create two Buttons "Move Up" and "Move Down" with arrows for reordering Employees list. Moving Up for the first element and Moving Down for the last should do nothing.

Hint: Display Unicode character codepoint inside Button's Content: 2191 for Up Arrow and 2193 for Down Arrow.

Home part

Stage 1 (3 points) – Saving, closing and confirming

Add to "File" menu options to "Save file…", "Save" and "Close", with a Separator before the last one.

- Clicking "Save file…" should let user decide where to Save CSV file and write data to that path.
- Clicking "Save" should save data without prompting the user.
- Clicking "Close" should prompt if user wants to save (but only if there were any changes) with options Yes/No/Cancel. Saving should not prompt user for a path.
- When trying to "Open File…", when there are any unsaved changes, user should be asked to save with options Yes/No/Cancel. Saving should not prompt the user for a path.
- When saving without prompt, the path of most recent load or save should be used.
- Set SaveFileDialog file format filter to .csv files.
- Remember to add CSV Header at the start.

Hint: System.Windows.MessageBox, subscribing to PropertyChanged

Stage 2 (3 points) – Adding and deleting Employee entries

Add a Button "Add new Employee" to the main window. Clicking it should display a new Topmost Window (if it's not already open). The window should not prevent user from interacting existing Employees. If the button is pressed when the new window is Minimized, it should come back to Normal state.

Add a Button "Delete Employee" to the original window which deletes selected Employee.

Requirements:

- New Window is Topmost can only minimize and have width and height = 500
- New Window starts on screen center
- New Window closes with the main window (after Menu/Close click)
- Font Size 14
- Maximum length of First Name and Last Name set to 50
- Default Birth Date set to 30 years before current date
- Maximum length of Birth Country set to 100
- Salary validated like in Lab part Stage 3, displaying Error Message in ToolTip
- Default Salary set to 5000
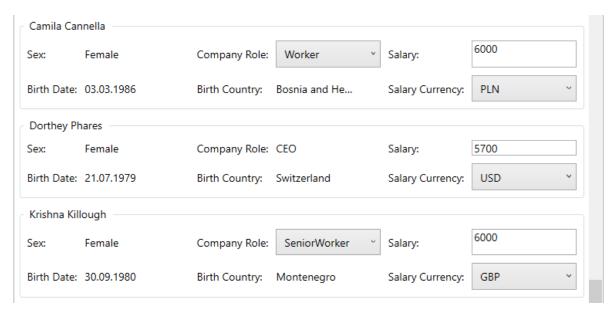- Salary Currency and Company Role edited like in Lab part Stage 2

Forbidden:

- Two or more "Add new Employee" windows opened at one time

Hint: Compare Window.Show and Window.ShowDialog methods

Stage 3 (3 points) – CEO role change

User should not be able to change CEO role. CEO employee CompanyRole should be displayed in a TextBlock control instead of a ComboBox.

Required:

- Implementation of DataTemplateSelector

Hint: DataTemplateSelector

Stage 4 (3 points) – Animation

Perform a short animation when hovering items in the Employees list as shown in example application. Use MouseEnter event to start the animation. It should consist of Rotations applied in the following sequence:

Angle from	Angle to	Duration in seconds	BeginTime	Additional
	-2	0.01		
-2	2	0.02	0.01	AutoReverse=True, Repeat 2 times
	0	0.01	0.13	

Hint: EventTrigger, Storyboard, RenderTransform, RenderTransformOrigin