

Making a library

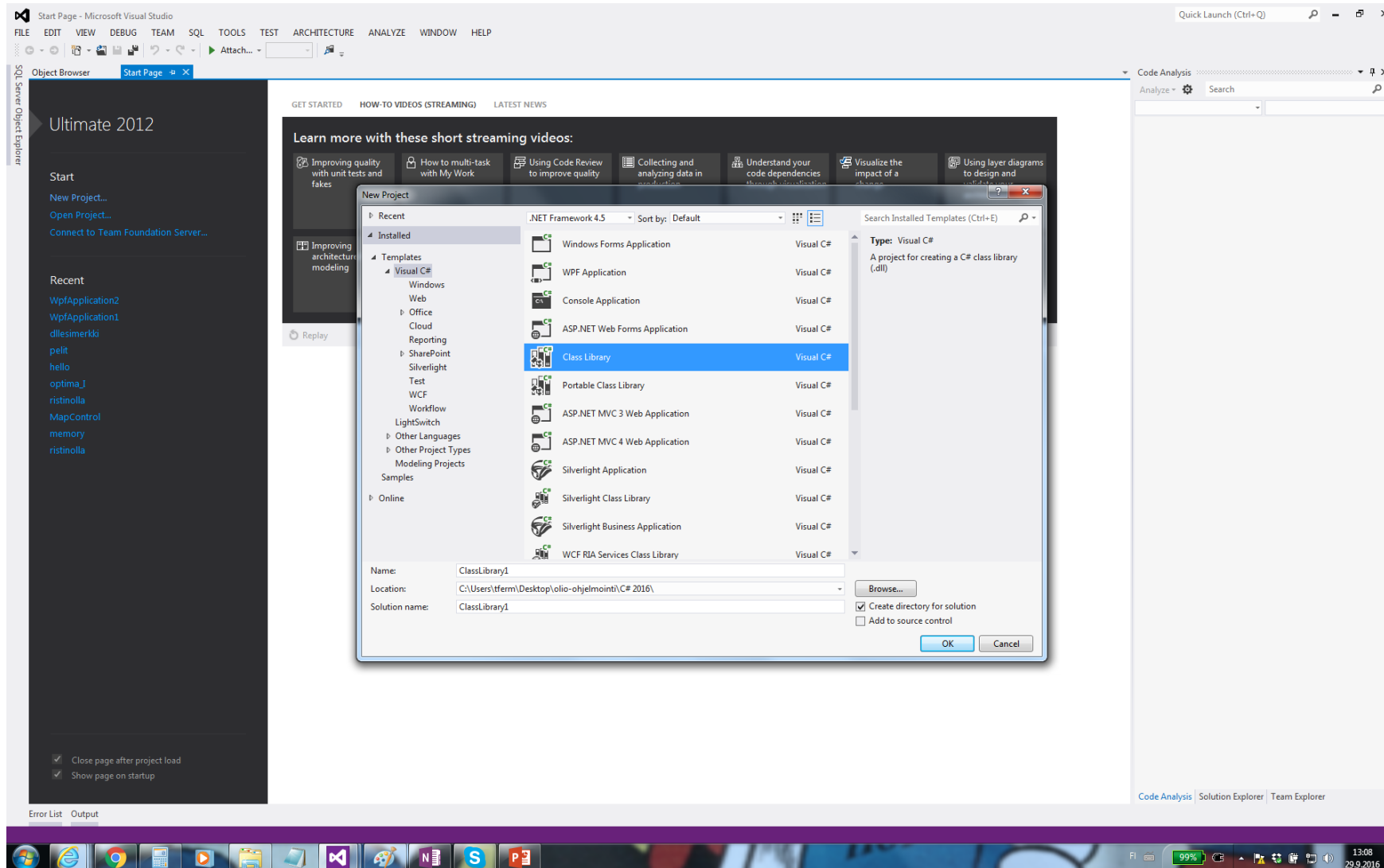
Library dll is a collection of compiled components

Library can be released as such (without code, without Visual Studio)

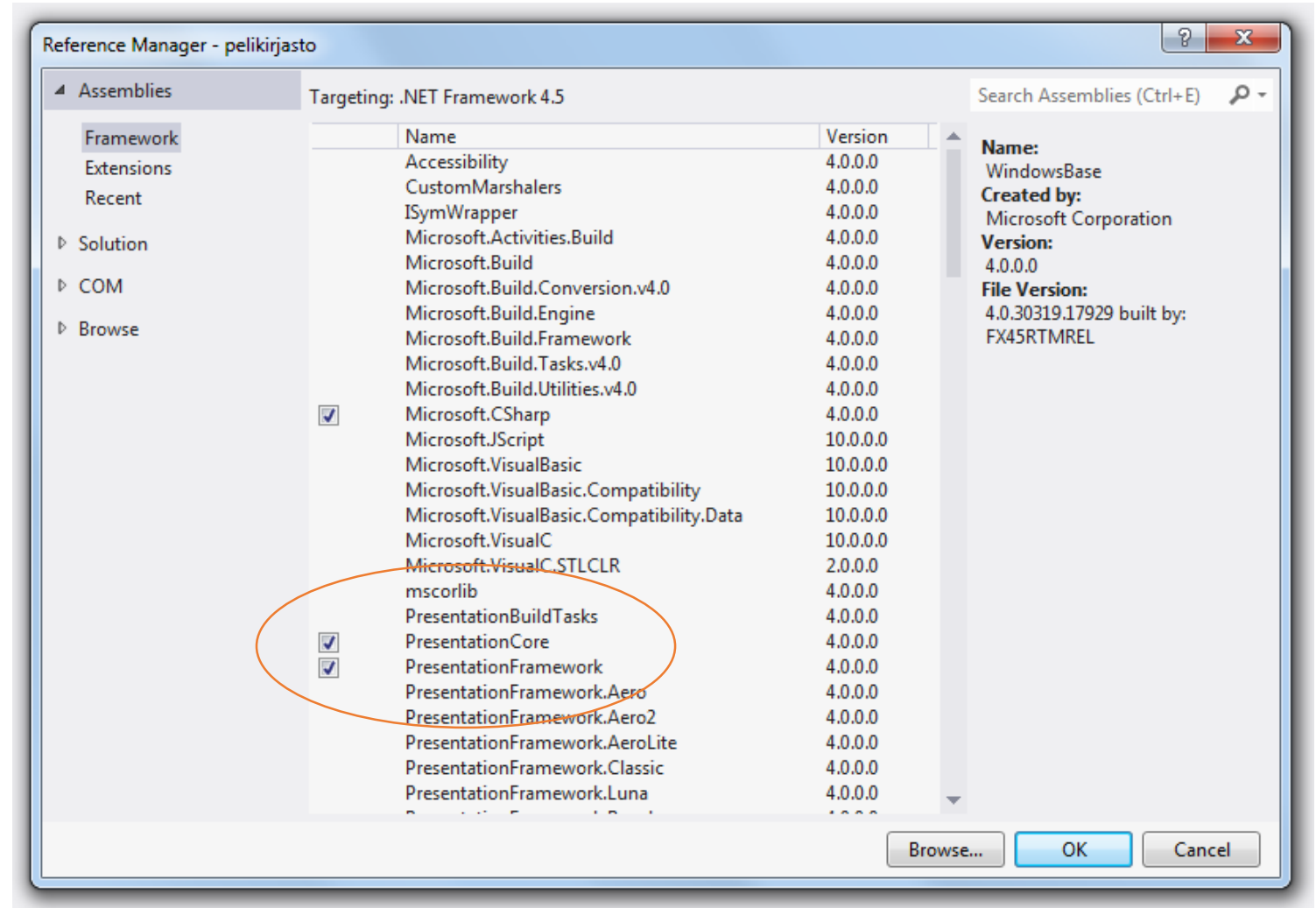
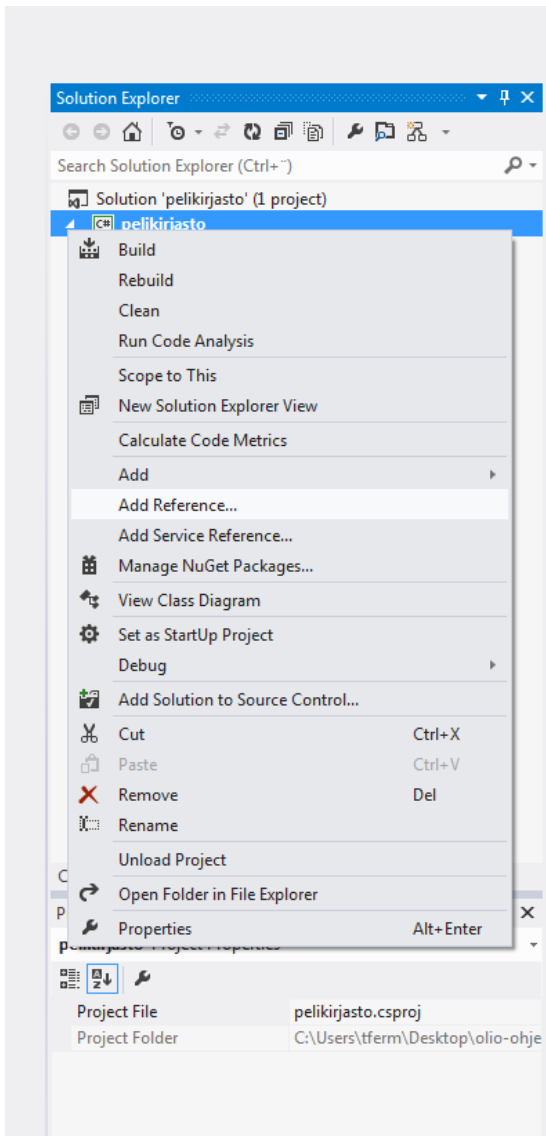
In this example board games and their boards are collected to one library
which is then used in a new project



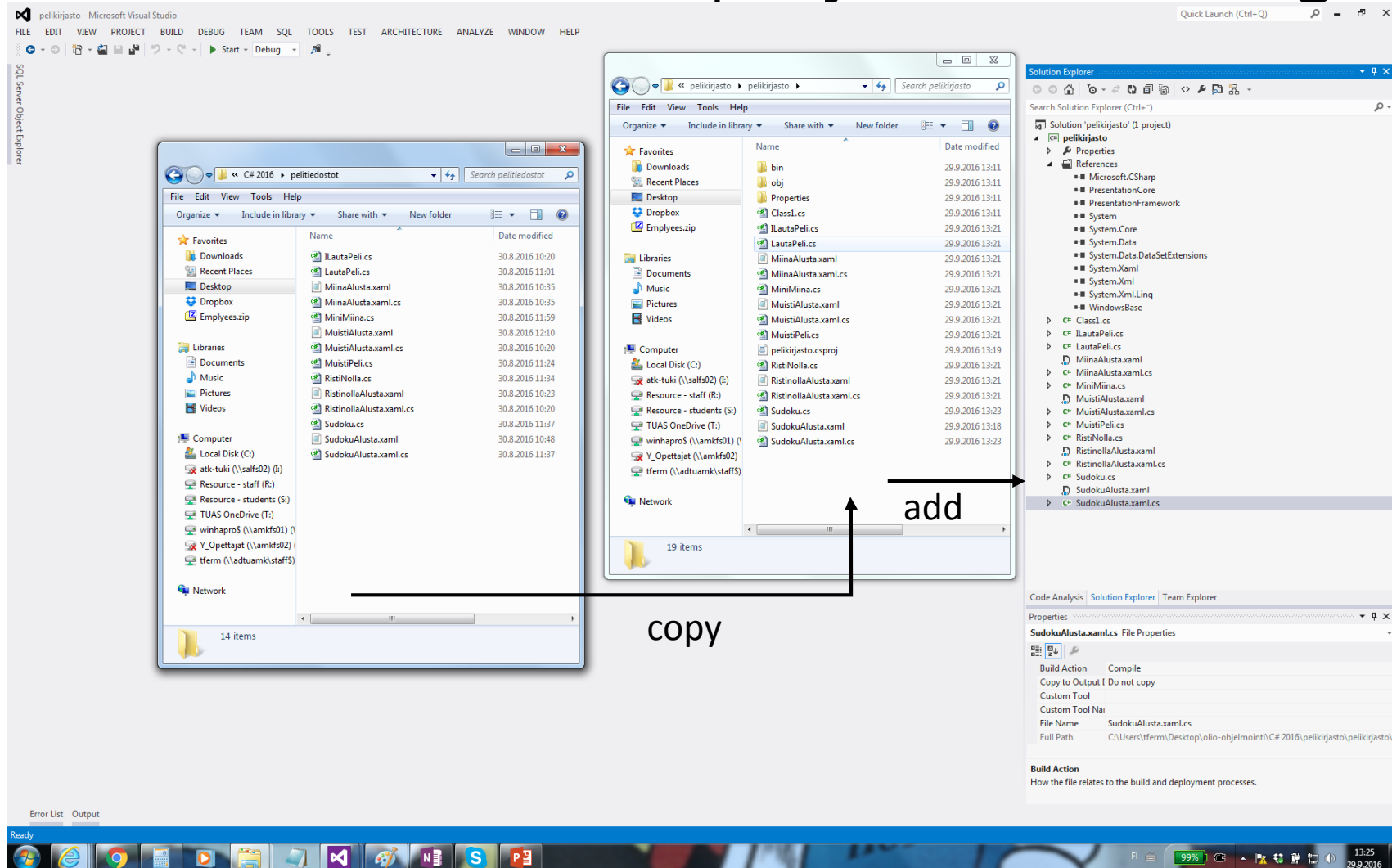
1. Start a new project of type library (dll)



2. Add references to PresentationCore, System.xaml, PresentationFramework ja WindowsBase

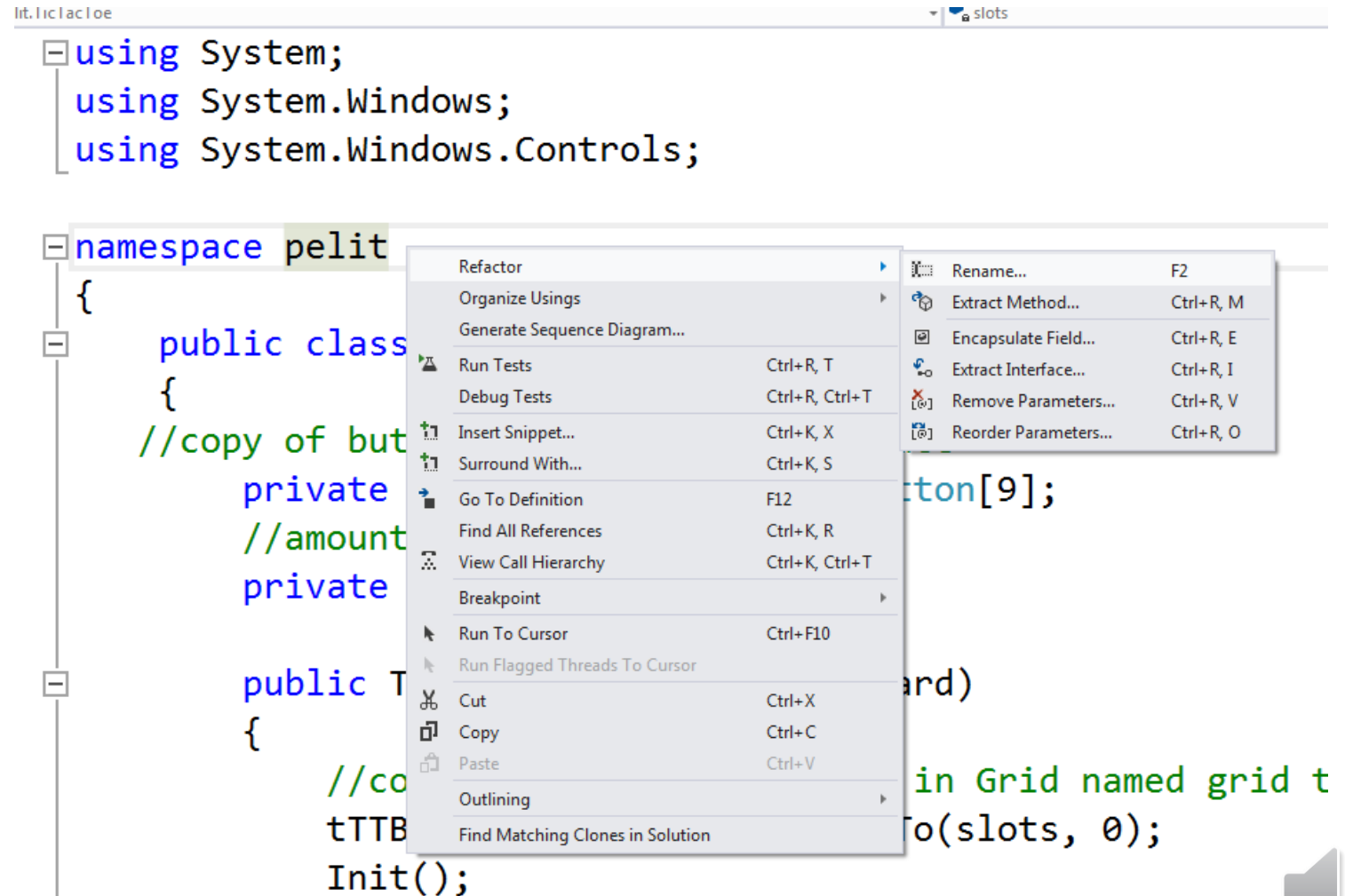


3. Copy the existing components (files) to project folder and add them into project as existing items



4.Ensure all components are in the same namespace

Usually classes in one dll are in one namespace or a major namespace has subnamespaces



The screenshot shows a Visual Studio editor window with a C# code file. The code is as follows:

```
using System;
using System.Windows;
using System.Windows.Controls;

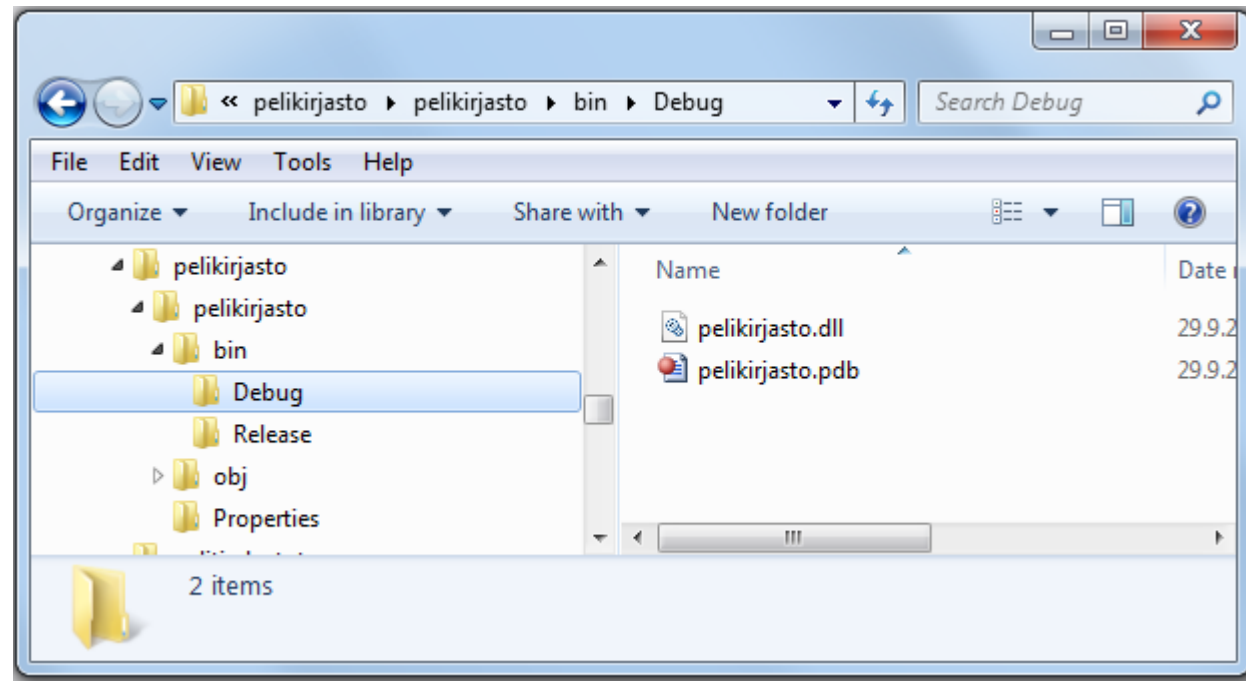
namespace pelit
{
    public class
    {
        //copy of but
        private
        //amount
        private

        public T
        {
            //co
            tTTB
            Init();
        }
    }
}
```

A context menu is open over the 'pelit' namespace, showing various refactor options. The 'Refactor' menu is expanded, and the 'Rename...' option is highlighted. The 'Rename...' option has a keyboard shortcut of F2. Other options in the 'Refactor' menu include 'Organize Usings', 'Generate Sequence Diagram...', 'Run Tests', 'Debug Tests', 'Insert Snippet...', 'Surround With...', 'Go To Definition', 'Find All References', 'View Call Hierarchy', 'Breakpoint', 'Run To Cursor', 'Run Flagged Threads To Cursor', 'Cut', 'Copy', 'Paste', 'Outlining', and 'Find Matching Clones in Solution'. The 'Rename...' option is also highlighted in the 'Refactor' menu.



5. Build the project



NOTE!

The project does not have a startable program and can not be run



6. Use the dll

a. Startable program in the same project

- Add into same project a subproject of type wpf and add the components you want from the library project (remember reference to library project)
- Set as StartUp project the Wpf-project
- Build and run

b. Startable project as a separate project

- Start a completely new project of type wpf
- Add a reference to the library dll you just created
- Add the components you want from the library
- Build and run



B.1

Add reference to dll

The screenshot shows the Microsoft Visual Studio interface with the following components:

- Top Menu Bar:** FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, SQL, TOOLS, TEST, ARCHITECTURE, ANALYZE, WINDOW, HELP.
- Left Sidebar:** SQL Server Object Explorer, Toolbox.
- Top Tab Bar:** MainWindow.xaml, MainWindow.xaml.cs.
- Right Sidebar:** Solution Explorer showing the project structure for 'games_in_use' (1 project), including Properties, References, App.config, App.xaml, and MainWindow.xaml.
- MainWindow Design View:** Shows a XAML snippet for a Window with a Grid.

```
<Window x:Class="games_in_use.MainWindow"
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        Title="MainWindow" Height="350" Width="525">
    <Grid>
    </Grid>
</Window>
```
- Reference Manager - games_in_use:** A dialog box with tabs for Assemblies, Solution, COM, and Browse. The Browse tab is active, showing a list of files to reference. The file 'ClassLibrary1.dll' is selected, with its path 'C:\Users\tferm\Desktop\olio-ohjelmointi\C#'. The Name field is set to 'ClassLibrary1.dll'.
- Select the files to reference...:** A file selection dialog box showing the 'bin' directory. The file 'pelikirjasto.dll' is selected. The File name field is set to 'pelikirjasto.dll' and the file type is 'Component Files (*.dll;*.tlb;*.ol)'. The Add button is highlighted.

B.2

Add namespace to xaml

The screenshot displays the Microsoft Visual Studio IDE with the following components:

- Top Menu Bar:** FILE, EDIT, VIEW, PROJECT, BUILD, DEBUG, TEAM, SQL, TOOLS, TEST, ARCHITECTURE, ANALYZE, WINDOW, HELP.
- Toolbox:** Located on the left, showing 'SQL Server Object Explorer' and 'Toolbox'.
- Design View:** The central area shows a visual representation of a 'MainWindow' window.
- XAML View:** The bottom-left pane shows the XAML code for the 'MainWindow'. The code is as follows:

```
<Window x:Class="games_in_use.MainWindow"
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        xmlns:games="pelit"
        Title="MainWi">
    <Grid>
    </Grid>
</Window>
```
- References:** The bottom-right pane shows the 'References' list, which includes various system assemblies such as 'Microsoft.CSharp', 'System', 'System.Core', 'System.Data', 'System.Data.DataSetExtensions', 'System.Xml', 'System.Xml.Linq', and 'WindowsBase'.
- Properties Window:** The bottom-right pane also shows the 'Properties' window, which is currently empty.
- Taskbar:** The bottom of the screen shows the Windows taskbar with several application icons and a system clock indicating 13:44 on 29.9.2016.

B.3

Add components to xaml

games_in_use - Microsoft Visual Studio

FILE EDIT VIEW PROJECT BUILD DEBUG TEAM SQL TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP

Start Debug

MainWindow.xaml* x MainWindow.xaml.cs

SQL Server Object Explorer Toolbox

Solution Explorer

Search Solution Explorer (Ctrl+)

Solution 'games_in_use' (1 project)

- games_in_use
 - Properties
 - References
 - Microsoft.CSharp
 - pelikirjasto
 - PresentationCore
 - PresentationFramework
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
 - System.Xml
 - System.Xml.Linq
 - WindowsBase
 - App.config
 - App.xaml
 - MainWindow.xaml

Code Analysis Solution Explorer Team Explorer

Properties

Search Properties

100% Design XAML

```
<Window x:Class="games_in_use.MainWindow"
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        xmlns:games="clr-namespace:pelit;assembly=pelikirjasto"
        Title="MainWindow" Height="350" Width="525">
    <Grid>
        <games:
    </Grid>
</Window>
```

MemoryBoard
MiinaAlusta
SudokuAlusta
TTTBoard

Error List Output

Ready

Ln 7 Col 16 Ch 16 INS

99% 13:45 29.9.2016

B.4 Build and run

games_in_use - Microsoft Visual Studio

FILE EDIT VIEW PROJECT BUILD DEBUG TEAM SQL DESIGN FORMAT TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP

Start Debug

MainWindow.xaml* MainWindow.xaml.cs

SQL Server Object Explorer Toolbox

MainWindow

Size of the board

☒ 4x4
☐ 6x6
☐ 8x8
☐ 10x10

NEW GAME SHOW ALL

Design XAML

```
<Window x:Class="games_in_use.MainWindow"
        xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        xmlns:games="clr-namespace:pelit;assembly=pelikirjasto"
        Title="MainWindow" Height="569" Width="768">
    <Grid>
        <games:MemoryBoard </games:MemoryBoard>
    </Grid>
</Window>
```

100 %

Error List Output

Solution Explorer

Search Solution Explorer (Ctrl+)

Solution 'games_in_use' (1 project)

games_in_use

Properties

References

- Microsoft.CSharp
- pelikirjasto
- PresentationCore
- PresentationFramework
- System
- System.Core
- System.Data
- System.Data.DataSetExtensions
- System.Xml
- System.Xml.Linq
- System.Xml.Linq
- WindowsBase

App.config

App.xaml

MainWindow.xaml

Code Analysis Solution Explorer Team Explorer

Properties

Name <No Name>

Type Window

Search Properties

Arrange by: Category

Brush

Appearance

Common

Content (Grid)

Icon

ResizeMode CanResize

New

Ready

13:46 29.9.2016