

Wyższa Szkoła Bankowa

Programowanie Obiektowe

Sprawozdanie do ćwiczenia nr 2

Imię i nazwisko: Mykhailo Zaliznyi

Adres email: zaliznyimh@gmail.com

Numer albumu: **144388**

Data: 27.08.2023

Link do repo na Github:

<https://github.com/zaliznyimh/ProgramowanieObiektoweZadanie2>

Rozdział 1 – Zadania do zrealizowania

1) Tworzymy klasę **ScreenLineEntry** z następującymi polami:

```
public class ScreenLineEntry
{
    /// <summary>
    /// Properties for lines which will be outputted to the console
    /// Backgroundcolor
    /// ForegroundColor
    /// Text
    /// </summary>
    Ссылка: 1
    public ConsoleColor BackgroundColor { get; set; }
    Ссылка: 1
    public ConsoleColor ForegroundColor { get; set; }
    Ссылка: 1
    public string? Text { get; set; }
}
```

2) Tworzymy klasę **ScreenDefinition** z listem typu **ScreenLineEntry**:

```
Ссылка: 2
public class ScreenDefinition
{
    /// <summary>
    /// List which contain lines from JSON
    /// </summary>
    Ссылка: 4
    public List<ScreenLineEntry> LineEntries { get; set; }

    /// <summary>
    /// Ctor.
    /// </summary>
    /// <param name="lineEntries"></param>
    Ссылка: 0
    public ScreenDefinition(List<ScreenLineEntry> lineEntries)
    {
        LineEntries = lineEntries;
    }
}
```

3) Dodajemy klasę **ScreenLineHelper** w którą będzie Dictionary.

```
Ссылка: 4
public class ScreenLineHelper
{
    /// <summary>
    /// Dictionary which contain value and lines
    /// </summary>
    Ссылка: 4
    public Dictionary<ScreenLineEnum, ScreenDefinition>? ScreenLine { get; set; }
}
```

4) W klasę **ScreenDefinitionService** dodałem 2 metody **ScreenLineHelper** **Load()**, **ShowLines()**

```

/// <summary>
/// Method which reads property from JSON file
/// </summary>
/// <param name="jsonFileName"></param>
Ссылка: 3
public static ScreenLineHelper? Load(string jsonFileName)
{
    try
    {
        string jsonString = File.ReadAllText(jsonFileName);
        ScreenLineHelper? screenLineHelper = JsonConvert.DeserializeObject<ScreenLineHelper>(jsonString) ;

        return screenLineHelper;
    }
    catch (Exception ex)
    {
        Console.WriteLine("There is an error during reading json file." + ex.Message);
        return null;
    }
}

```

```

public string? ShowLines(string jsonFileName, ScreenLineEnum property, int lineID)
{
    _screenLineHelper = Load(jsonFileName);

    if (_screenLineHelper != null && _screenLineHelper.ScreenLine != null) {
        Console.BackgroundColor = _screenLineHelper.ScreenLine[property].LineEntries[lineID].BackgroundColor;
        Console.ForegroundColor = _screenLineHelper.ScreenLine[property].LineEntries[lineID].ForegroundColor;
        Console.WriteLine(_screenLineHelper.ScreenLine[property].LineEntries[lineID].Text);
        Console.ResetColor();
        return "Ok";
    }
    else
    {
        Console.WriteLine("Your JSON file is null here.");
        return null;
    }
}

```

5) Dalej dodałem nowy project o nazwie **SampleHierarchies.Services.Tests**

Testy z klasy **ScreenDefinitionServiceTests**(Wszystkie Unit Testy są w projekcie)

Również można zobaczyć, że Unit Testy działają poprawnie.

Test	Duration	Tr	Group Summary
SampleHierarchies.Services.Tests (4)	133 ms		SampleHierarchies.Services.Tests
SampleHierarchies.Services.Tests (4)	133 ms		Tests in group: 4
ScreenDefinitionServiceTests (4)	133 ms		Total Duration: 133 ms
Load_JsonFileIsNotNull_ReturnsScreenLineHelper	20 ms		Outcomes
Load_JsonFileIsNull_ReturnsNull	< 1 ms		4 Passed
ShowLines_NormalJsonFile_OutputToConsolesSuccessful	46 ms		
ShowLines_NotNormalJsonFile_OutputToConsolesNotSuccessful	67 ms		

```

[TestMethod]
0 references
public void Load_JsonFileIsNotNull_ReturnsScreenLineHelper()
{
    // Arrange
    var screenDefinitionService = new ScreenDefinitionService();

    // Act
    var result = ScreenDefinitionService.Load(notNullJsonFileNameLoad);

    // Assert
    Assert.IsNotNull(result);
}

[TestMethod]
0 references
public void Load_JsonFileIsNull_ReturnsNull()
{
    // Arrange
    var screenDefinitionService = new ScreenDefinitionService();

    // Act
    var result = ScreenDefinitionService.Load(isNullJsonFileNameLoad);

    // Assert
    Assert.IsNull(result);
}

```

6) Tworzymy pliki JSON które przechowują wszystkie linii dla każdego ekranu
 Na przykład, JSON file dla **MainScreen** wygląda tak. Dla każdej linii również jest ustawiona kolorystyka linii.

```

2  "ScreenLine": {
3    "Show": {
4      "LineEntries": [
5        {
6          "BackgroundColor": 2,
7          "ForegroundColor": 5,
8          "Text": "Your available choices are:"
9        },
10       {
11         "BackgroundColor": 6,
12         "ForegroundColor": 5,
13         "Text": "0. Exit"
14       },
15       {
16         "BackgroundColor": 3,
17         "ForegroundColor": 7,
18         "Text": "1. Animals"
19       },
20       {
21         "BackgroundColor": 4,
22         "ForegroundColor": 8,
23         "Text": "2. Settings"
24       },
25       {
26         "BackgroundColor": 9,
27         "ForegroundColor": 15,
28         "Text": "Please enter your choice: "
29       },
30       {
31         "BackgroundColor": 8,
32         "ForegroundColor": 11,
33         "Text": "Sorry, but you can't change any settings in program "
34       },
35       {
36         "BackgroundColor": 6,
37         "ForegroundColor": 13,
38         "Text": "Goodbye!"
39       },
40       {
41         "BackgroundColor": 7,
42         "ForegroundColor": 15,
43         "Text": "Invalid choice. Try again."
44       }
45     ]
46   }

```

Tak wygląda metoda **Show()** w klasie **MainScreen**

```
public override void Show()
{
    while (true)
    {
        Console.Clear();
        _screenDefinitionService.ShowLines(jsonFileName, ScreenLineEnum.Menu, 0); // Screen history: MainScreen
        _screenDefinitionService.ShowLines(jsonFileName, ScreenLineEnum.Show, 0); // Your available choices are:
        _screenDefinitionService.ShowLines(jsonFileName, ScreenLineEnum.Show, 1); // 0. Exit
        _screenDefinitionService.ShowLines(jsonFileName, ScreenLineEnum.Show, 2); // 1. Animals
        _screenDefinitionService.ShowLines(jsonFileName, ScreenLineEnum.Show, 3); // 2. Settings
        _screenDefinitionService.ShowLines(jsonFileName, ScreenLineEnum.Show, 4); // Please enter your choice:
    }
}
```

Tak wygląda konsola dla ekranu MainScreen-a

```
Screen history: MainScreen
Your available choices are:
0. Exit
1. Animals
2. Settings
Please enter your choice:
|
```

Konsola AnimalsScreen-a

```
Screen history: MainScreen -> AnimalsScreen
Your available choices are:
0. Exit
1. Animals
2. Save to file
3. Read from file
Please enter your choice:
|
```

Konsola MammalsScreen-a

```
Screen history: MainScreen -> AnimalsScreen -> MammalsScreen
Your available choices are:
0. Exit
1. Dogs
2. Wolves(Wolfs)
3. Dolphins
4. Bengal Tiger
Please enter your choice:
|
```

8) Dla każdego ekranu istnieje własny JSON file z liniami

MainScreen – EnMainScreenLines.json,

AnimalsScreen – EnAnimalsScreenLines.json,

MammalsScreen – EnMammalsScreenLines.json,

DogsScreen – EnDogsScreenLines.json,

DolphinsScreen – EnDolphinsScreenLines.json,

BengalTigerScreen – EnTigersScreenLines.json,

WolfsScreen - EnWolfsScreenLines.json;

8) Historia ekranów również jest napisana w plikach JSON

```
"Menu": {
  "LineEntries": [
    {
      "BackgroundColor": 9,
      "ForegroundColor": 15,
      "Text": "Screen history: MainScreen -> AnimalsScreen -> MammalsScreen -> DogsScreen"
    },
    {
      "BackgroundColor": 9,
      "ForegroundColor": 15,
      "Text": "Press any key to continue "
    }
  ]
}
```