

Refactoring Documentation for Baloons-Pop-4 Game

TELERIK ACADEMY 2014

TEAM "BALOONS-POP-4"

Summary

This document summarizes the refactoring changes that have been made to the original project. The changes are separated into categories, in which only a sample of the changes has been provided. Note that the actual number of improvements in the code are substantially more, than the examples below.

Redesigned and refactored the structure of the project:

- The project has been renamed from *ConsoleApplication1* to *BalloonsPopsGame*
- The main class has been renamed from *Program.cs* to *BalloonsPops.cs*
- Extracted the present classes and structs in separate files with high quality names (i.e. *Rows.cs*)

Reformatted the source code:

- Removed all unneeded empty lines, most of which were at the beginning and the end of the methods (i.e. in *sortAndPrintChartFive*)
- Inserted empty lines between the methods and after the loops and conditionals for better readability
- Split the lines containing several statements into several simple lines
- Modified (added/removed or changed the position of) the curly braces { and } according to the best practices for the C# language (i.e. { *return*; } => *return*)
- Removed unnecessary constructions from the code (i.e. empty *else* blocks after an *if* statement, *return* keyword at the end of a *void* method etc.)
- Fixed incorrect character casing. All variables and fields were made camelCase (i.e. *Skilled* => *skilled*) and types and methods were made PascalCase
- Formatted all other elements of the source code according to the best practices for the C# language
- Removed the unnecessary comments (i.e. “kolko me cepi glavata, piqna sym ot vcera, sha vyrna li vodkata ili sha ya poema, dajte mi bira, da iztrezneyaaa”, “some trinket stuff again” etc.)
- Added XML documentation/comments for each method and class

Renamed variables and methods, i.e.:

- Methods
 - *gen* => *Generate*
 - *printMatrix* => *Print*
 - *change* => *ModifyGameField*
 - *doit* => *IsWinner*
- Variables
 - *temp* in method *gen* => *gameField*
 - *klasirane* in method *sortAndPrintChartFive* => *highScores*
 - *matrix* in method *doit* => *gameField*
 - *userMoves* in *Main* => *userMovesCount*

Introduced constants (i.e. *TOP_FIVE_FILE_PATH*).

Extracted/combined methods, i.e.:

- Extracted method *ProcessUserInput* from *Main*

- Combined methods *checkUp*, *checkBottom*, *checkRight* and *checkLeft* into the *CheckCells* method

Introduced the following classes and moved all the appropriate functionality within them:

- *GameEngine* >> *InitializeGame*, *PrintGameField*, *PlayGame*, *ExitGame*
- *HighScores* >> *Print*, *Save*, *Load*, *IsPlayerInChart*
- *GameLogic* >> *ModifyGameField*, *IsWinner*, *FallDown*, *ProcessUserInput*, *CheckCells*
- *GameField* >> *Generate*, *Print*

Refactored the user interface

- Added color to the game cells, so they can be distinguished more easily
- All of the messages that are displayed to the user have been corrected, so that only sentences written in grammatically correct and appropriate English are printed
- Console is cleared after each move, so that the user does not have to scroll down after several moves. This also creates a neat “animation” of falling cells