# Refactoring Documentation for Project “Bulls and Cows 4”

Team “Promethium”

1. Redesigned the project structure:
   * Renamed the project to **BullsAndCowsGame**.
   * Renamed class **klasirane**to **ScoreBoard.**
   * Class **bikove\_i\_kravi**split into classes **Engine, UserInterface, NumberManager, CommandParser**
2. Reformatted the source code:
   * Removed all unneeded empty lines, e.g. in the method **Start()**in **bikove\_i\_kravi** class.
   * Inserted empty lines between the methods.
   * Split the lines containing several statements into several simple lines, e.g.:

|  |  |  |
| --- | --- | --- |
| **if (input[i] != ' ') break;** | **🡪** | **if (input[i] != ' ')**  **{**  **break;**  **}** |

* + Formatted the curly braces **{** and **}** according to the best practices for the C# language.
  + Put **{** and **}** after all conditionals and loops (when missing).
  + Character casing: variables and fields made **camelCase**; types and methods made **PascalCase**.
  + Formatted all other elements of the source code according to the best practices introduced in the course “[High-Quality Programming Code](http://codecourse.telerik.com/)”.

1. Renamed variables:
   * Renamed variable **maxCountOfStoredData**to **maxCount** in class **ScoreBoard**.
   * Renamed constant **WelcomeMessage** to **WELCOME\_MESSAGE**
   * Renamed constant **WrongCommandMessage** to **WRONG\_COMMAND\_MESSAGE**
2. Introduced methods:
   * Method **ToString()** in class **ScoreBoard**
3. Extracted, movedor changed methods:
   * Method **Reset()** of class **ScoreBoard**changed from public to protected.
   * Method **ShowHelp()** in class **UserInterface** class split into **ShowHelp()** and **PrintCheatsLimitReached()**
4. Introduced classes:
5. Moved declarations:
   * Declaration of enumeration **PlayerCommand** moved to separate file, changed accessibility from private to internal.
6. Added documentation and tests**class Player**.
7. Overriding**ToString()** method for **class Player**.
8. Cleared some of the **Usings** that are not used and changed :
9. In **Engine.cs** – the constant **NUMBER\_LENGHT** to **NumberLenght,** renamed **generateNumber** to **GenerateNumber**
10. In **UserInteface**– constants - **WELCOME\_MESSAGE** to **WelcomeMessage, WRONG\_COMMAND\_MESSAGE** to **WrongCommandMessage.**
11. In **UserInteface**– rename the static strings &stringbuilder – **helpNumber** to **HelpNumber**, **helpPattern** to **HelpPattern**, **generatedNumber** to **GeneratedNumber.**
12. In **UserInteface**– made field **ScoreBoard** to **readonlyscoreboard.**
13. In **UserInteface**– **generateHelpPattern** to **GenerateHelpPattern.**
14. In **UserInteface – PokajiHelp**to **ShowHelp**&also changed in **Engine.**
15. Refactoring **class Engine** and extracting methods to **class NumberManager**.
    * Public constant **int NUMBER\_LENGHT**(removed from Engine)
    * Public method **string GenerateNumber()**(removed from Engine)
    * Public method **void GetBullsAndCows(…)**(removed from Engine)
16. In **class ScoreBoard** – added private static int **defaultScoreBoardLenght** for the empty constructor
17. Refactoring class Number. Added regions