**Refactoring Documentation for Project “Bulls-and-Cows”**

**1. Redesigned the project structure: Team “…”**

 Renamed the project to … .

 Renamed the main class Program to … .

 Extracted each class in a separate file with a good name: ….cs, ….cs, ….cs.

 …

**2. Reformatted the source code:**

 Removed all unneeded empty lines, e.g. in the class GameEngine.

 Inserted empty lines between the methods.

 Split the lines containing several statements into several simple lines, e.g.:

if (input[i] != ' ') break;

became:

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”.

 …

**3. Renamed variables:**

 For instance in gameEngine: Ch to MaskedNumber.

 In Main(string[] args): g  gameFifteen.

**4. Introduced constants:**

 private const int DigitsCount = 4;

 private const char MaskChar = 'X';

 private const int MinNumber = 1000;

 private const int MaxNumber = 10000;

**5. Extracted the method … from the method Main().**

**6. Introduced class RandomUtils and created method GenerateRandomNumber(int minValue, int maxValue).**

**7. Introduced class NumberComparer to compare the original number to the input guess number through methods GetNumberOfBulls() and** **GetNumberOfCows().**

**8. …**