# Refactoring Documentation for Project “Game 15”

Team “**BORON**”

1. Redesigned the project structure:
   * Renamed the project to **GameFifteen**.
   * Renamed the main class **Program** to **PlayGameFifteen**.
   * Extracted each class in a separate file with a good name: **GameFifteen.cs**, **Board.cs**, **Point.cs**.
   * …
2. Reformatted the source code:
   * Removed all unneeded empty lines, e.g. in the method **PlayGame()**.
   * 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:
   * In class **Fifteen**: **number** 🡪 **numberOfMoves**.
   * In **Main(string[] args)**: **g** 🡪 **gameFifteen**.
   * …
2. Introduced constants:
   * **GAME\_BOARD\_SIZE = 4**
   * **SCORE\_BOARD\_SIZE = 5**.
   * …
3. Extracted the method **GenerateRandomGame()** from the method **Main()**.
4. Introduced class **ScoreBoard** and moved all related functionality in it.
5. Moved method **GenerateRandomNumber(int start, int end)** to separate class **RandomUtils**.

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