**GAME-FIFTEEN-1 TEAM**

**Project Name – High Quality Programming Code Project**

**Game Name – Fifteen, console based implementation**

**Team Members:**

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**Project Explanation**

1. **Game plot**

The game represents an interactive console-based implementation of the “Fifteen” game in which the player tries to sequentially arrange the numbers from 1 to 15 in a square matrix of size 4 x 4. The game starts from randomly shuffled 15 numbers in a matrix (4 x 4) and a random cell left empty. At each turn the player enters a number from the matrix, a neighbor to the empty cell, that should move onto its place. The game finishes when the numbers are arranged in a consequential manner. When the game is finished, a new game automatically starts.

The help menu is included into the starting screen, on top of it. By typing “start” a player starts a new game. By typing “top” we can have the scoreboard visualized and the game paused. Typing “exit” brings us to the end of the game, no matter if a game solution is reached or not.

1. **Source Code**

The game consists of several logical sections, each of which is responsible for a different part of the program:

**Contracts** – This section contains all of the interfaces we use for the whole game. It has a sub-directory called Engine, which holds all the interfaces relevant for the engine itself. Through these interfaces we, in fact, implement the **Strategy Design Pattern** (Behavioral DP).

**Engine** – This is the place where

**Extensions** – This is the place where we generate random numbers for the initialization of the starting matrix.

**GameObjects** – This is the place where we create all the objects of the game (instances of the Field Matrix class, the Player class and the Scoreboard class) and also including the Scoreboard Proxy class needed for the **Proxy Design Pattern** (Structural DP).

**GameFifteen.Test** – We have placed all our unit tests into this section.

More detailed information can be found within the source code of the project itself.

1. **Team Collaboration**

For the processing of the game project our team used the GitHub CMS. Our project URL is:

<https://github.com/hristofornikolov/TeamSupremeProject>