Project: Packing Game

General Information

The aim of the project is to develop a two-player packing game. Human plays against the computer. The one who has the highest score in 60 seconds wins the game.

Game Elements

- 2 players
    - o Human, Computer
- Randomly generated 12 blocks (length: 4-9 squares) for both players
    - o Box 0: A, B, C, D, E, F, G, H, I, J, K, L blocks for Human player o Box 0: A, B, C, D, E, F, G, H, I, J, K, L blocks for Computer player
- 3 empty boxes (length: 20 squares) for each player
    - o Box 1, box 2, box 3 for Human player o Box 1, box 2, box 3 for Computer player

Game Initialization

- Game elements are blocks made up of letters.
- There are 12 blocks for each player.
- Letters from A to L are used for block ID.
- At the beginning of the game, blocks are generated with random lengths. The block lengths are between 4 and 9 letters.
- The same set of randomly generated blocks is used by Human Box 0 and Computer Box 0.

Game Playing Rules

- Also each player has 3 boxes: Box 1, box 2, box 3. Each box size is 20 squares.
- When the game starts, both players try to place their blocks into their boxes (1, 2, 3) simultaneously. The aim of the game is to transfer blocks from box 0 to boxes 1, 2, 3.
- If a block doesn't fit into a box, cannot be placed in that box.
- Each player works on his box/blocks set. They do not interfere with the other player.

Game Playing for Human Player

- Human player uses commands to transfer blocks. Commands are 2 characters. The first character is the block name (A to L), and the second character is the box to be transferred. For example;
    - Command **C2**: Transfer C block to Box 2.

Game Playing for Computer Player

- The Computer player places his blocks into the boxes randomly. And saves the best placements.

Score Calculation

- The score of a player is the sum of the squares of his blocks which he can place into the boxes 1, 2, 3.

End of the Game and the Winner

- When the time is up (60 seconds), the player who has the highest score wins.

Suggested Environment/Functions

- Environment: Use a console window with min. 100*30 characters (by setting console defaults (using the right mouse click on the title bar of a running console)).

- Human commands: Use Console.**ReadKey** and Console.**KeyAvailable** functions to allow the Computer Player AI to run.

- Debug Mode: During the coding process, display the content of the computer boxes to debug the code.