.NET Backend developer test: Fruit Wars

The purpose of this test is primarily to examine your problem solving skills.
Please follow this spec carefully!

You are expected to make your code elegant / beautiful and the best you can do. It's not sufficient that it works please ensure separation of logic / object oriented abstraction. Comment your code as necessary.

The problem

Implement a console app - two-sided game for player vs player (playing on a single machine) gaming of Fruit Wars. The game mechanics are described bellow.

Warriors:

- **Turtle.** The turtle has 1 speed point and 3 power points
- **Monkey.** The monkey has 2 speed points and 2 power points
- **Pigeon.** The pigeon has 3 speed points and 1 power point

Fruits:

- **Apple.** Apple provides +1 power point to a warrior
- **Pear.** Pear provides +1 speed point to a warrior

Set up game:

Before the game each player chooses a warrior. The players can choose warriors of the same type.

Example console Output / Input:

```
Player1, please choose a warrior.
Insert 1 for turtle / 2 for monkey / 3 for pigeon
3
Player2, please choose a warrior.
Insert 1 for turtle / 2 for monkey / 3 for pigeon
1
```

In the example player1 decided to play with pigeon warrior and player2 decided to play with turtle warrior.

- The game is played on a 8x8 grid.
- There are two players, represented by the numbers 1 and 2 on the grid.
- There are 4 apples, represented by a letter 'A' on the grid.
- There are 3 pears, represented by a letter 'P' on the grid.
- Each player and each fruit has size of 1, i.e. they are in a singe cell.

Warriors and the fruit should be randomly placed on the grid. Starting position requires players to be at least 3 moves apart from each other. Fruits need to be at least 2 moves

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apart from each other. Moves will be explained in the section Gameplay

Gameplay

When the grid is set up the game starts with the first player.

Before every turn, the program should display on console the grid and the information(power and speed) for both players.

Example:

```
-1------
---P--A-
----A---
--------
-A---2--
--------
-------A
--P-P---

Player1: 1 Power; 3 Speed
Player2: 3 Power; 1 Speed
```

After that the player, which is on turn, moves as many times as the number of speed points he has. When pressing some of the arrow keys the player moves one cell in the selected direction

Example:

```
Player1, make a move please!
```

// Let's assume player one hit right arrow here

```
--1-----
---P--A-
----A---
--------
-A---2--
--------
-------A
--P-P---

Player1: 1 Power; 3 Speed
Player2: 3 Power; 1 Speed

Player1, make a move please!
```

// Right arrow again

```
---1----
---P--A-
```

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```
----A---
--------
-A---2--
--------
-------A
--P-P---

Player1: 1 Power; 3 Speed
Player2: 3 Power; 1 Speed

Player1, make a move please!
```

// Now down to 'eat' a pear

```
--------
---1--A-
----A---
--------
-A---2--
--------
-------A
--P-P---

Player1: 1 Power; 4 Speed
Player2: 3 Power; 1 Speed
```

This is the end of player1's turn. He had 3 speed points before the turn and moved 3 cells. Moving is one cell only and is performed up, down, left or right. Never diagonally. The direction of the move is determined by user input using the arrows on the keyboard.

A distance that is traveled by a warrior on a single move(not turn) is called 1 move distance. Two cells that are next to each other are at 1 move distance.(use this for Starting position rule)

If a player changes his speed during the turn it will affect his next turn, not this one. In the example above player one had 3 speed points before the turn, so he moved 3 times, no matter he got a pear during the turn.

Now it's player2's turn. He will move only once, because he has 1 speed point. After this single move, player1 will play his 4 moves. Then player2 with a single move and so on...

When a player steps on a cell with a fruit – it's warrior 'eats' the fruit and becomes respectively faster or stronger. Warriors never get weaker or slower. They just add speed and power.

Fruit which is 'eaten' is not shown anymore and cannot be 'eaten' again.

If a player moves to a cell occupied by the other player the player who has more power points instantly wins the game. If both players have equal power points, the game is draw.

On the end of the game, you have to display the grid (all remaining fruit and the winner's

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position; the loser should not be displayed) the winning player and it's warrior type and give the players the opportunity to play a new game.

Example:

```
--------
------A-
--------
--------
-1------
--------
--------
----P---

Player 1 wins the game.
Pigeon with Power: 4, Speed: 4

Do you want to start a rematch? (y/n)
```

When the game is draw, there is no need to print the grid or details about the warriors.

Example:

```
Draw game.
Do you want to start a rematch? (y/n)
```

Please email your finished solution zipped up (without binaries and in .zip format not .rar, .7z, etc.)

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