Assignment 1

Choose one design pattern among those that we saw in class. For this design pattern, you must have a corresponding implementation in your code. If not, refactor your code to include it. Then, complete the following points:

1. Write a natural language description of why and how the pattern is implemented in your code.
2. Make a class diagram of how the pattern is structured statically in your code.
3. Make a sequence diagram of how the pattern works dynamically in your code.

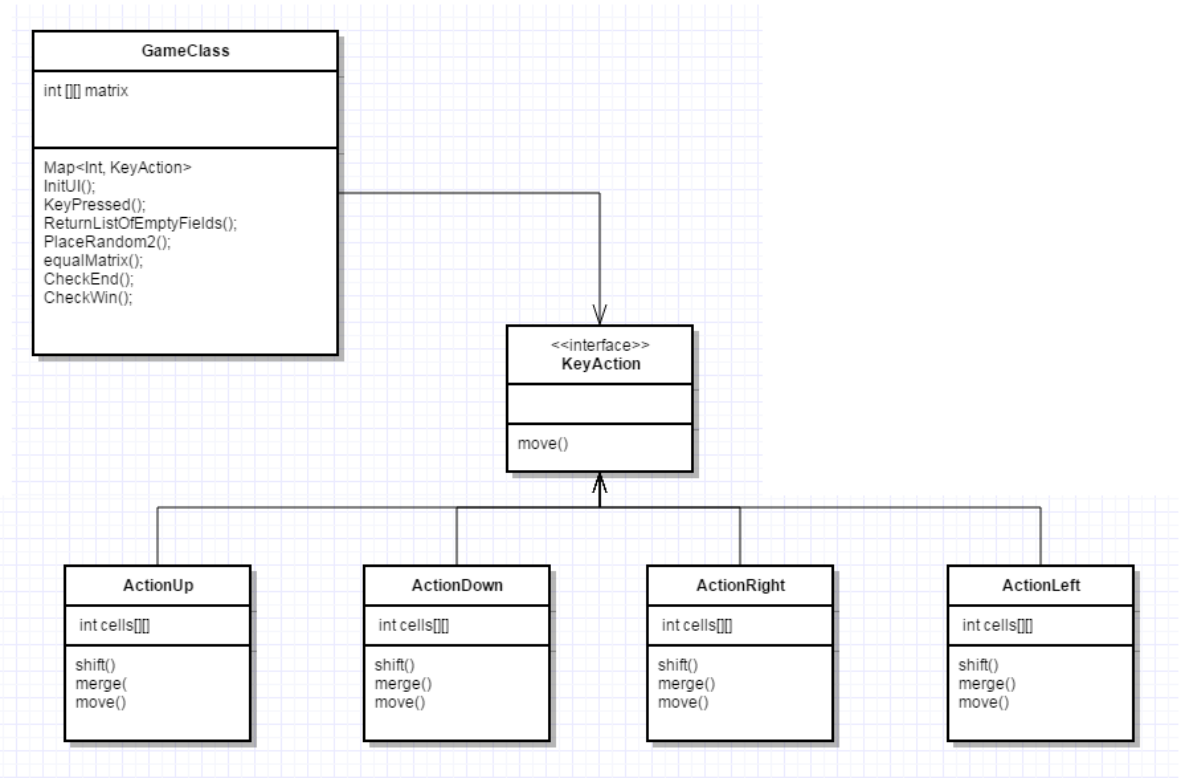
1 Natural description

We have decided to implement the **Strategy pattern**. The reason is the following, in 2048 game we have four moves, and we can think about it as four different behaviors of the same action.

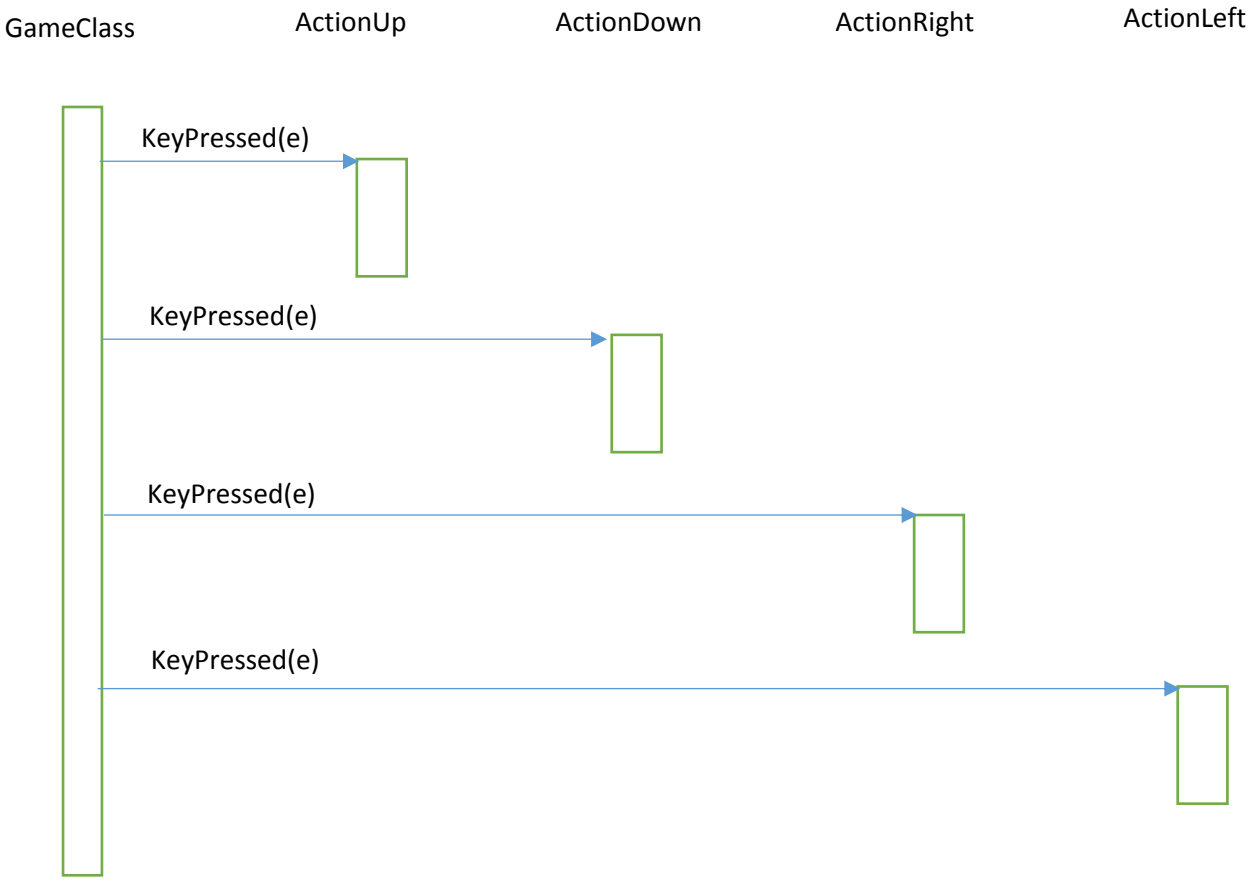
In our first version of the program in our class *GameClass* there is a method *move* which takes one parameter *direction*. Based on this parameter we have four 'if cases'. It makes our code not scalable, if we want to add different movement, we have to change *GameClass*. Using strategy pattern, we can make our program scalable, because if we want to add another action, we just need to create a new class.

In the new version of the program it makes sense also implement the **Singleton pattern** since we would like to be sure that a specific movement is instantiated only once.

2 Class diagram



3 Sequence diagram



Working condition: the player presses the keys in the following orders: ↑ ↓ → ←