Assignment 2

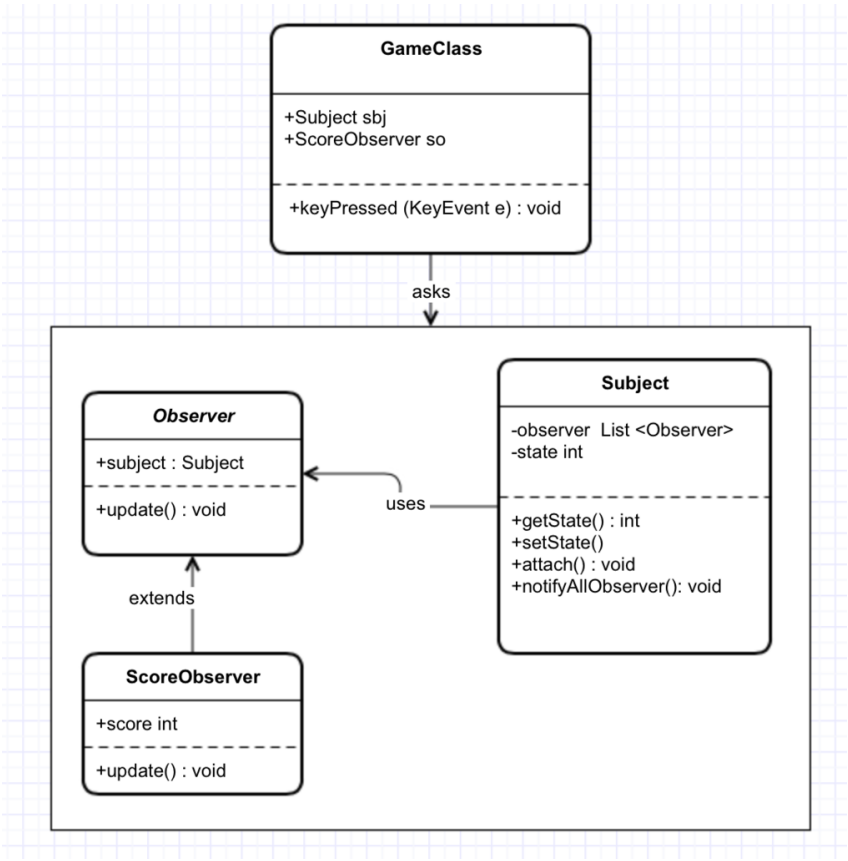
Choose one design pattern among those that we saw in class. For this design pattern, you must have a corresponding implementation in your code. If not, refactor your code to include it. Then, complete the following points:

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.

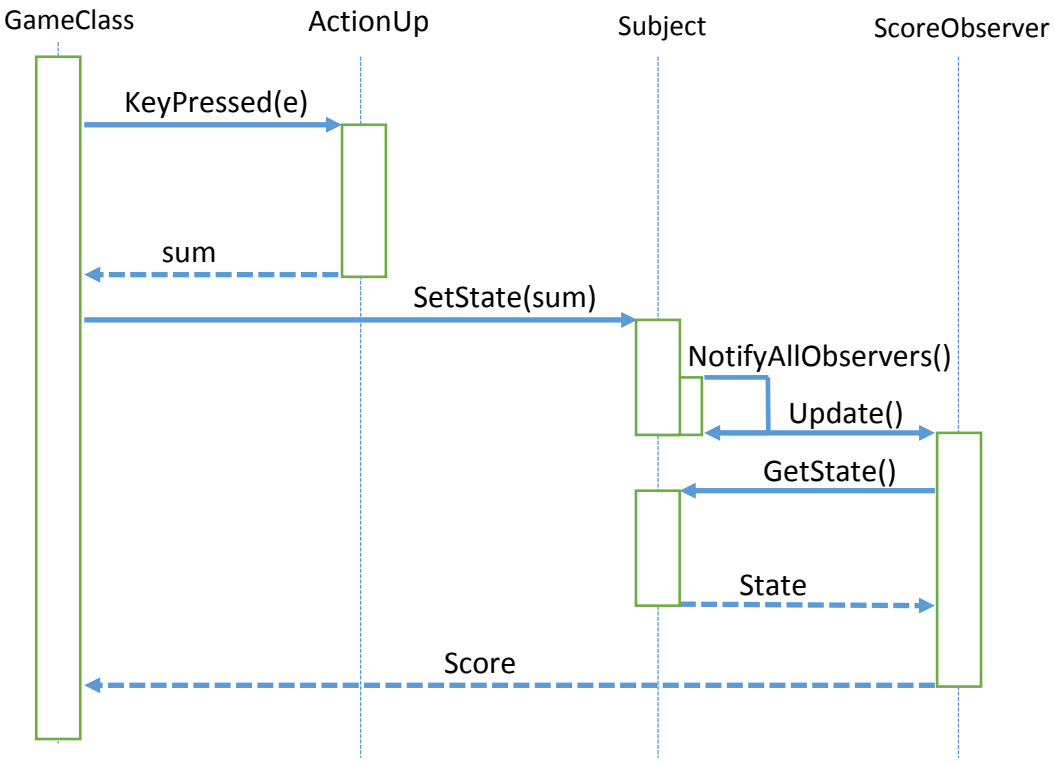
1 Natural description

We have decided to implement the **Observer Pattern**. The reason is the following: in 2048 game the objective is to obtain a cell with the number 2048, but usually the player would like to keep track on how he/she reached 2048, this can be done by implementing a *Score* and display it in the game window. By definition: "*The Observer Pattern defines a one-to-many dependency between objects so that when one object changes state, all of its dependents are notified and updated automatically",* in our case when the *Matrix* changes its state, the *Score* is notified and it requests information from *Matrix*, then the score is updated. For this reason, the Design Pattern Observer fits perfectly for our purpose.

2 Class diagram



3 Sequence diagram



Working condition: the player presses the key ↑