

## CSE 241 HW5

### Base Class

An abstract class with pure virtual functions, which common needs for a 2D board game.

```
class BoardGame2D{
public:
    virtual void playUser(string input) = 0;
    virtual void playUser() = 0;
    virtual void playAuto() = 0;
    virtual void playAutoAll() = 0;
    virtual bool endGame() = 0;
    virtual int boardScore() = 0;
    virtual void initialize() = 0;
};
```

### Derived Classes

I overloaded the virtual functions according to game play and rules.

Added some other functions according game if it is needed.

I used a simple only play function check moves validity with an other function before this function.

Inputs are should be as it shown below for each game(d = down, u = up, r = right, l = left)

PegSolitaire: "e4-d"

EightPuzzle: "2-r"

Klotski: "B-u"

**Score functions** checks how much you close to end of the puzzle for EightPuzzle and Klotski. For PegSolitaire returns the peg amount left on the board. If the number closer the to zero it is a better result.