

Mandatory Exercise – Lecture J1

02160 – Agile Object-Oriented Software Development

v. 2019-2-5

Instructions

It is mandatory to complete this exercise and to submit it the day before the next lecture (deadline is 12-02-2019 23:59). To deliver the exercise, upload **only** the . java file containing your solution in DTU Inside.

It is possible to work in pairs but in this case it is necessary to clearly state that. Additionally, during the next session, you might be asked to explain your solution. In case you are not able to properly explain the solution and answer related questions, the whole exercise will be considered as failed.

Exercise

Design a simple program to play a simplified version of checker¹. Specifically, the program has to print the board and then alternatively ask the correct player to insert the old and the new coordinates of the piece to move. The system has to check whether the coordinates refer indeed to a player's owned piece and that the new position fulfills the requirements (i.e., diagonal forward move in an empty cell). The program has to continue until the user terminates it. It is not mandatory to implement jumps (or multiple jumps) and piece crownings.

An example of "gameplay" is (in blue the input provided by the user):

```
    0 1 2 3 4 5 6 7    <- X axis
+-----+
0 | 1   1   1   1 |
1 |1   1   1   1 |
2 | 1   1   1   1 |
3 |               |
4 |               |
5 |2   2   2   2 |
6 | 2   2   2   2 |
7 |2   2   2   2 |
+-----+
    0 1 2 3 4 5 6 7

Turn of player no. 1
Coordinate of piece to move
```

¹See <https://en.wikipedia.org/wiki/English draughts>.

```

Enter X: 1
Enter Y: 2

Coordinate of new position
Enter X: 0
Enter Y: 3
Piece moved!

    0 1 2 3 4 5 6 7  <- X axis
+-----+
0 | 1 1 1 1 |
1 |1 1 1 1 |
2 | 1 1 1 |
3 |1 |
4 | |
5 |2 2 2 2 |
6 | 2 2 2 2 |
7 |2 2 2 2 |
+-----+
    0 1 2 3 4 5 6 7

Turn of player no. 2
Coordinate of piece to move
Enter X: 0
Enter Y: 5

Coordinate of new position
Enter X: 1
Enter Y: 4
Piece moved!

    0 1 2 3 4 5 6 7  <- X axis
+-----+
0 | 1 1 1 1 |
1 |1 1 1 1 |
2 | 1 1 1 |
3 |1 |
4 | 2 |
5 | 2 2 2 |
6 | 2 2 2 2 |
7 |2 2 2 2 |
+-----+
    0 1 2 3 4 5 6 7

Turn of player no. 1
Coordinate of piece to move
Enter X: 2
Enter Y: 1

Coordinate of new position
Enter X: 1
Enter Y: 2
Piece moved!

```

```

      0 1 2 3 4 5 6 7  <- X axis
+-----+
0 | 1   1   1   1 |
1 |1       1   1 |
2 | 1   1   1   1 |
3 |1               |
4 | 2               |
5 |   2   2   2   |
6 | 2   2   2   2 |
7 |2   2   2   2 |
+-----+
      0 1 2 3 4 5 6 7

Turn of player no. 2
Coordinate of piece to move
Enter X:

```