

```
1 package chess.pieces;
2
3 import boardgame.Board;
4 import boardgame.Position;
5 import chess.ChessPiece;
6 import chess.Color;
7
8 public class Knight extends ChessPiece {
9     public Knight(Board board, Color color) {
10         super(board, color);
11     }
12
13     private boolean canMove(Position position){
14         ChessPiece p = (ChessPiece) getBoard().piece(position);
15         return p == null || p.getColor() != getColor();
16     }
17
18     @Override
19     public boolean[][] possibleMoves() {
20         boolean[][] mat = new boolean[getBoard().getRows()][getBoard().getColumns()];
21
22         // 2-up-left
23         Position p = new Position(position.getRow()-2, position.getColumn()-1);
24         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
25         p.setColumn(p.getColumn()+2); // 2-up-right
26         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
27
28         // 2-down-left
29         p.setValues(position.getRow()+2, position.getColumn()-1);
30         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
31         p.setColumn(p.getColumn()+2); // 2-up-right
32         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
33
34         // 2-left-up
35         p.setValues(position.getRow()-1, position.getColumn()-2);
36         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
37         p.setRow(p.getRow()+2); // 2-left-down
38         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
39
40         // 2-right-up
41         p.setValues(position.getRow()-1, position.getColumn()+2);
42         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
43         p.setRow(p.getRow()+2); // 2-right-down
44         if (getBoard().positionExists(p)) {mat[p.getRow()][p.getColumn()] = canMove(p);}
45
46         return mat;
47     }
48
49     @Override
50     public String toString() {
51         return "N";
52     }
53 }
54
```