# Eight Puzzle

UniPi, Advanced Programming, first assignment

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To build and run using Maven: `mvn exec:java`

# Design overview

`EightBoard`:

- When instantiated, the board creates instances for every tile needed and the controller, making sure to register the veto listeners.

`EightTile`:

- Each tile, when clicked, will try to change its position to 9 (the hole), unless the controller vetoes the request via an event.

`EightController`:

- The controller keeps a reference to the tile that represents the current hole.
- The controller can veto the request of a tile to be moved by checking if that tile is next to the hole.

# Flip operation

The flip button is a JButton initialized inside `EightBoard`. In the same class, a method handles the flip operation by delegating part of the checking of the tiles' positioning to the controller (`EightController`).

```java
private void flipTiles() {
    // ...
    try{
        // asks the controller to check if the hole is at position 9
        if (!controller.isHoleAtPositionNine()) {
            throw new IllegalStateException("Hole is not at position 9.");
        }
        // ...
    }
    // ...
}
```

# Screenshots

| 1 | 2 | 3 |
|---|---|---|
| 4 | 5 | |
| 8 | | |

**Error**

Flipping is only permitted when the hole is at position 9.

OK

| 1 | 2 | 3 |
|---|---|---|
| 4 | 5 | 6 |
| 7 | 8 | |

RESTART   OK   FLIP