

## **COSC 411**

### **Homework 1 Report**

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9/27/24

1)

For this homework assignment, we were required to make a fully functioning 15 puzzle game in python using QtGui. My program consists of a buildBoard function and the game class. The game class consists of initiation, a paint board function, and mouse click event function.

When the program is executed, a 4x4 grid of values 1-15 and an empty square are generated in random order. The game is fully functioning, tallies all moves appropriately below the board, is always solvable, and cuts mouse input upon completion with a "YOU WIN!" message.

Section 2 on pages below.

2)

a)

15 GAME - Logan Kelsch

4	1	9	3
13	8	15	2
6	5	7	11
10	14		12

MOVES: 0

b)

4	1	9	3
13	8	15	2
6	5	7	11
10		14	12

MOVES: 1

c)

4	1	9	3
13	8	15	2
6	5	7	11
10	14		12

MOVES: 2

d)

4	1	9	3
13	8	15	2
6	5		11
10	14	7	12

MOVES: 3

e)

4	1	9	3
13	8	15	2
6	5	7	11
10	14		12

MOVES: 4

f)

4	1	9	3
13	8	15	2
6	5	7	11
	10	14	12

MOVES: 5

g)

4	1	9	3
13	8	15	2
6	5	7	11
10	14	12	

MOVES: 6

h)

4	1	9	
13	8	15	3
6	5	7	2
10	14	12	11

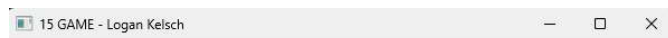
MOVES: 7

i)

4	1	9	3
13	8	15	2
6	5	7	
10	14	12	11

MOVES: 8

j)



YOU WIN!

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	

MOVES: 152

3)

The program will be titled **'game15\_LoganKelsch.py'**

4/5)

While I had only discussed colors with colleagues, I did use two online sources:

- 'Stack overflow' for a compact exclusive or (XOR) function to exclude empty cell clicks as tallied move (line 153).
- 'Qt Documentation' for understanding and properly implementing QPainter functionality, specifically QColor and drawText usage.