

Jasque Saydyk and Justin Coffey

Professor Elwakil, Melton, and McCarty

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## **Lab 07 - Lights Out**

### **1. Problem Statement**

The purpose of this program is to create the logic to allow the Lights Out program to work, allowing the provided test classes to open a provided, correctly formatted file and translating that to the game's logic to then be manipulated by the game. This required the creation of the LightsOut class that would perform the manipulations to the data, a LightsOutFileLoader class to handle loading files and converting them to logic that the game uses, and an UnsupportedLightsOutFileException, which happens when the file has symbols that the program doesn't use.

#### Requirements

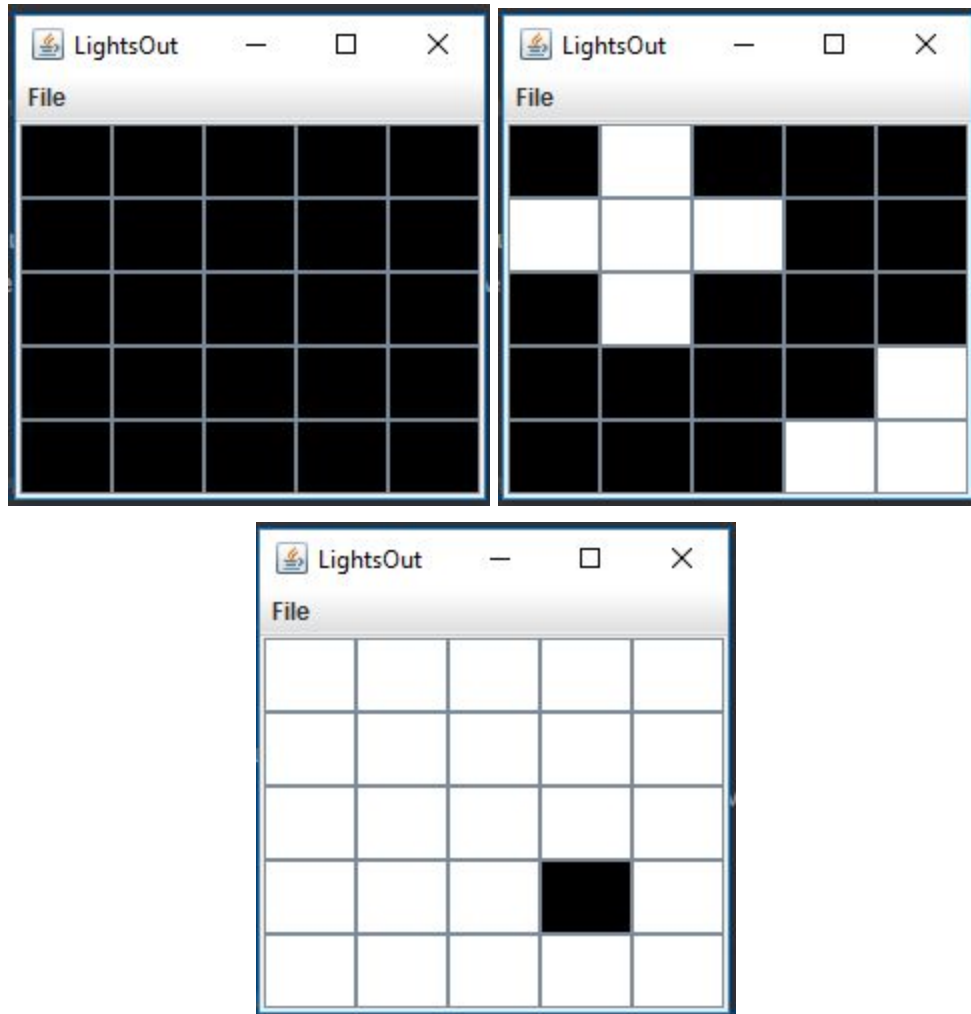
- Create the LightsOut class and fill it with the required methods
- Create the LightsOutFileLoader class and fill it with the required method
- Create the UnsupportedLightsOutFileException class
- Test with the provided class to ensure it works correctly

### **2. Planning**

There wasn't a lot of planning with this project as a lot of that work was done in the UML diagrams in the lab. We decided to use a two dimensional boolean array to hold the data for the game, then we added a private method to LightsOutFileLoader to handle the conversion from char from the given file to boolean to be used by the program. Besides that, this program was nearly completed in the span of the class period, with most of the time being spent on writing the comments of the program.

### **3. Implementation and Testing**

When implementing the program and testing the program, we ran into two errors of note. First is that we implemented the press method of the LightsOut class incorrectly, which forced the given input and all adjacent tiles to false. The second error we ran into was that we were using the isLit method in the press method, but in the isLit method, we did not handle how it would deal with an IndexOutOfBoundsException). Besides these two issues, the program ran smoothly.



#### 4. Reflection

All in all, this was a simple project compared to the last one we had completed. It reinforced the usage of exceptions and try-catch blocks and methods in which to read from files. I can't think of anyway we could improve this program besides maybe using an ArrayList instead of an array.