

ECE 476/676 - Homework #5

Graphic Display & Touch-Screen

Lights Out

Write a python program to play the game of lights out.

- The game consists of nine lights (0-8, displayed on the graphics display).
- At the start of the game, each light is either on or off at random.

Each round, the operator taps on one of the LEDs

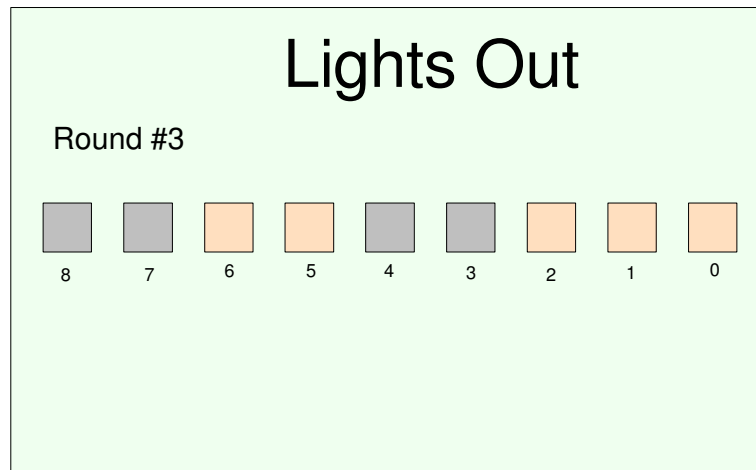
- Tapping on that LED toggles that LED as well as its two neighbors
- An ON LED becomes OFF while an OFF LED becomes ON

For example, in the figure below

- Tapping box #4 would toggle lights (5, 4, 3)
- Tapping box #0 would toggle lights (1, 0)
- Tapping box #8 would toggle lights (8, 7)

The goal of the game is to get all of the lights to turn off.

The LCD display could look something like this (not required - just one option)



Grading

- 10pt Generate random on/off lights at the start of each game
- 10pt Display the lights using the LCD graphics display
 - Use the shell window as an alternative (no points)
- 10pt Use the touch pad to select which LEDs to toggle
 - Use the terminal window for input as an alternative (no points)
- 10pt Toggle the selected LED and its neighbors
- 10pt Keep track and display the number of turns taken on the LCD
- 10pt Demonstrate the lights out game
 - Video preferred
 - Several photos also works