Scott Howland and Deyi Ji

Java Apps Development, CS372

Final Project Specification

**Application Description**

An Android application featuring a hex-based version of the game *Lights Out*. The game will consist of a 5x5 hexagonal grid. The initial board state will have a set, but randomly distributed number of cells “On” and set to a golden fill color, while the remainder are “Off” and set to a grey fill. Each cell will be able to toggle between On and Off states when a user presses them, also toggling each of its six neighboring cells. The user will have won the game when all cells are Off. There should also be a turn counter which indicates how many presses it has taken the user to advance to the current board state.

**Anticipated Challenges**

The bulk of the project’s difficulty will consist of proper construction of the hexagonal grid and mastering Android-specific implementation techniques. We will need to determine how best to organize the tile objects so that they can determine which hexes are their neighbors.

**Schedule**

**Monday 19:** Design complete and fleshed-out. Understand how tile objects will be set up, how they will interact as a grid. If not earlier, begin writing algorithms for construction of the 5x5 grid visually and determining a tile’s neighbors on user press.

**Thursday 22:** Complete construction of visual grid and determination of tile neighbors on user press. Stretch goal would be to have already implemented color-swapping at this point, but will be contingent on the aforementioned elements being implemented and tested. Begin work on color-swapping and the turn counter.

**Sunday 25:** Should have completed color-swapping elements and the turn counter display. Implement a victory popup when all tiles are Off and wrap up testing in preparation for Tuesday 27. Begin presentation work.



Figure The layout of the game grid