LED Ball Rolling Game

Lyle Kotte & Kushagra Srivastava

Introduction

- A game in which you “roll” a virtual ball across an LED screen by tilting it
- The goal of the game is to reach an endpoint/collect coins?
- Obstacles along the way
- Project with similar premise on Android device (we would use LED display instead):

Goal and Technical Details

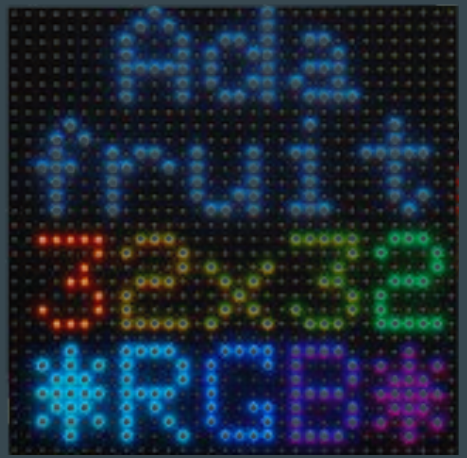
Goal: Create an engaging game that adequately uses all hardware components

Technical Details:

- Circle (ball) is drawn to screen based on its current position
- Tilt sensor is attached to LED display, used to determine tilt of board in x and y directions
- Ball's acceleration is added to/subtracted from according to the intensity of tilt in either direction
- Level is won/lost when ball collides with goal/obstacle
- Goal/obstacles are randomly placed each time a level is completed

Hardware Components Needed

- Neopixel LED display (32x32)
- 4 buttons to test ball moving input
- Tilt sensor
- Our makerboards (or potentially an Arduino Uno or Raspberry Pi, if computation/latency errors occur)



Approximate Timeline

- **Week 1:** Ordering components, brainstorming/planning as much as possible before they arrive
- **Week 2:** Attaching components, getting familiar with tilt sensor/using LED display
- W**eek 3:** Coding basic ball movement with button input, possibly start using tilt sensor
- **Week 4:** Tilt sensor ball movement finalized
- **Week 5:** Adding additional features (Winning a level, failing a level, obstacles)
- **Week 6:** Tweaking, bug fixing, play testing, polishing