Mini Skeeball

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Project Overview

Skeeball is a popular and classic arcade game that's over a 100 years old.

Simple game
- Achieve the highest score possible
- Roll a ball up a ramp into several pockets
- Harder to reach = more points!

Originally used mechanical systems or microswitches to detect ball movement.

Project Overview

We wanted to re-create a mini desktop arcade game

- A 3D printed frame for the actual game

- Real time scoring with a digital display

- Inputs will include pocket detection + gesture detection for menu navigation

Sensors

- IR Break Beam Sensor
  - Sends out beam of IR light to detect simple motion
  - IR LED + phototransistor
  - Digital input (high - low)
  - Detects when ball enters pocket

- APDS9960 gesture/proximity sensor
  - IR LED + direction photodiodes for movement
  - I2C Interface
  - Gesture based menu navigation
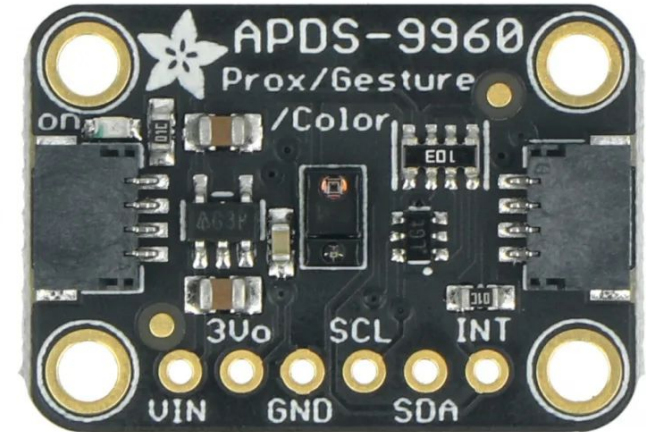
Actuators

- Score output: external LED display to show running score + end-of-round total.
- Audio feedback: speaker plays a short tone on score + start/end-of-round sound cue.
- Round control output behavior: at round start reset display + play "start" tone; at round end freeze score + play "end" tone
- SPI Communication - 4 wires, uses clock
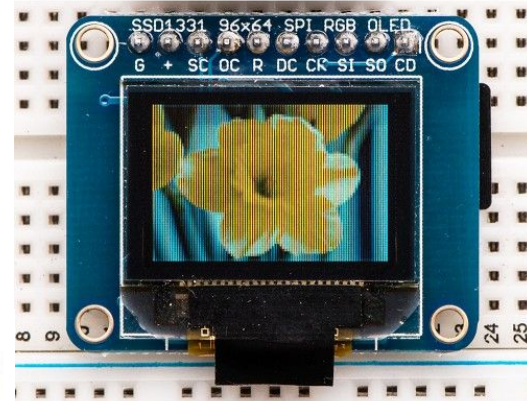
Stretch Goals

- Competitive mode
  - Two players alternate rounds; show "P1 / P2" and compare totals.

- Bonus targets
  - Randomly choose a "bonus pocket" each round; if hit, award extra points and show it on the display.

- High score
  - Save a high score and display between games

Schedule

Week 1 (Feb 9)
- Work on game design plan (skeeball layout, game modes, materials needed)
- Order parts (IR sensor, display, buttons, wires, etc)

Week 2 (Feb 16)
- Begin fabricating the skeeball frame
- Begin wiring the sensor to ensure it triggers and lights an led once it detects a ball

Week 3 (Feb 23)
- Assemble the frame and mount sensors
- Implement a scoring system and game mechanics (button starts / resets)

Week 4 (Mar 2)
- Ensure the game operates smoothly, bug testing
- Clean up cable management/fittings, redesign frame as needed

Week 5 (Mar 9)
- Prepare for demo and finishing touches
- Work on Stretch Goals