

# The Dueling Club

## An Interactive Spell Casting Game

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# Overview and Motivations

- Wanted to create a fun interactive game
- Inspired by the mechanisms behind “Virtual Drum Set” (2012)
- Needed to be buildable to meet project specifications
- Solution: An interactive spell casting game using visual input from a wand



Screencap from Harry Potter and the Half Blood Prince video game

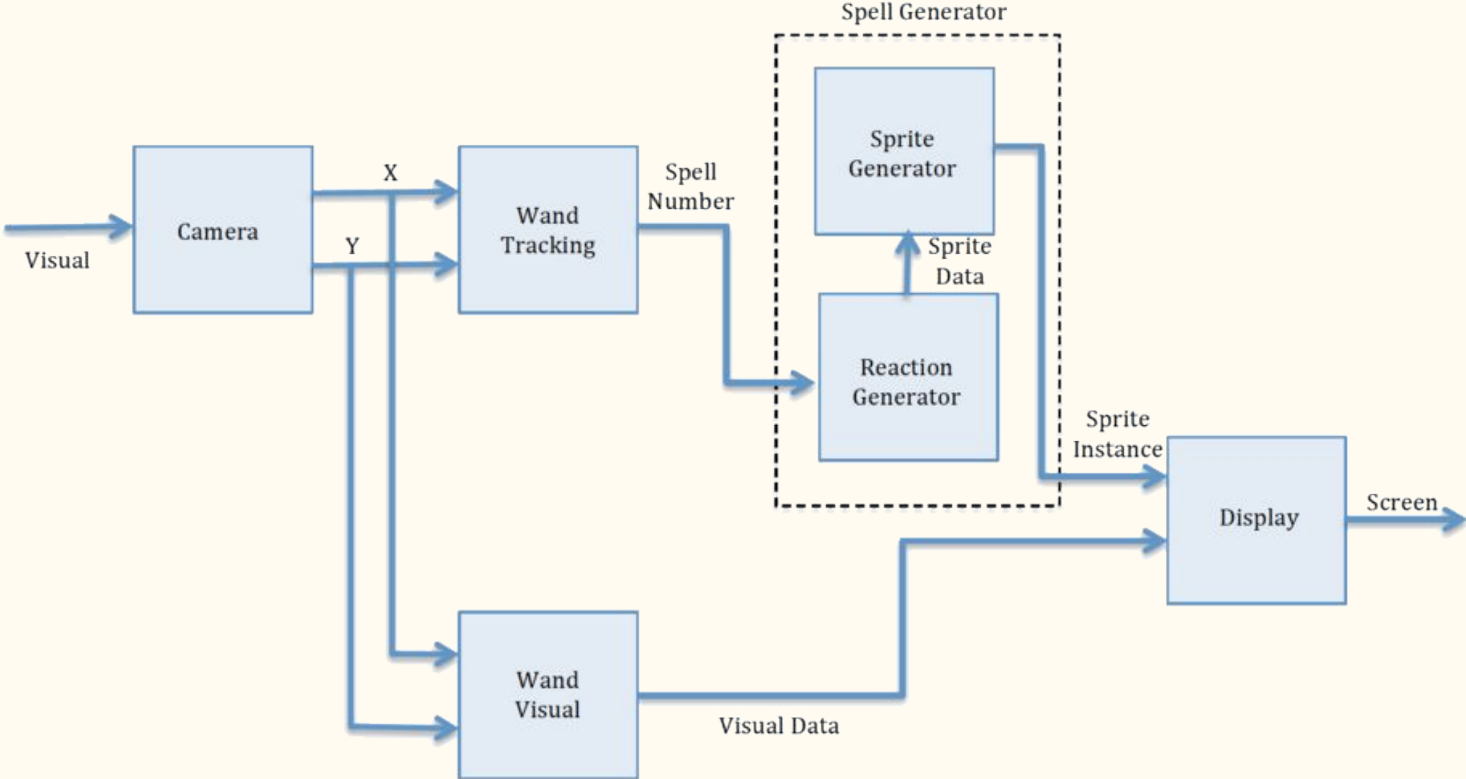
# Design Overview

- Use an NTSC camera with an IR filter to track an LED, streaming in xy coordinates
- Screen will be broken up into coordinate blocks, if the wand hits a certain set of block in the right order a spell number will be input into a finite state machine
- Different spell states will trigger a variety of reactions
- Two player mode takes in data for two wand tips, sends spell numbers to a dueling finite state machine which allocates point deductions based on spells cast

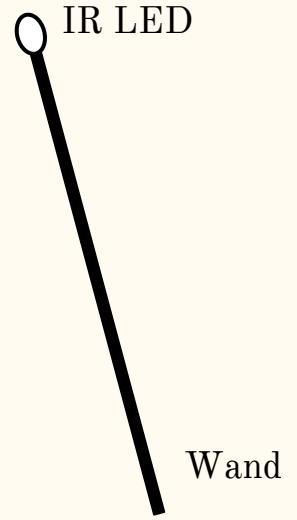
# Target Spell Bank

- Single player spell:
  - Accio: Bring sprite onto screen
  - Wingardium Leviosa: Book sprite moves up the screen
  - Engorio: Scales the sprite larger
  - Lumos: LED on labkit turns on
  - Nox: LED on labkit turns off
  - Aparecium: makes a message appear onscreen
  - Avis: Shoots a bird from the end of the wand
- Two play spells:
  - Variety of names and motion patterns
  - Output a number of points to be deducted from opponents score

# Block Diagram



# Camera Module

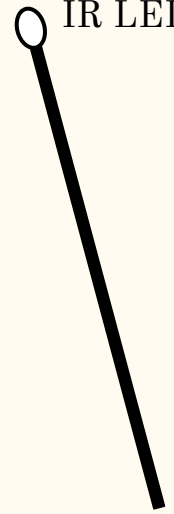


# Camera Module



Floppy Disk  
(IR Filter)

IR LED



Wand

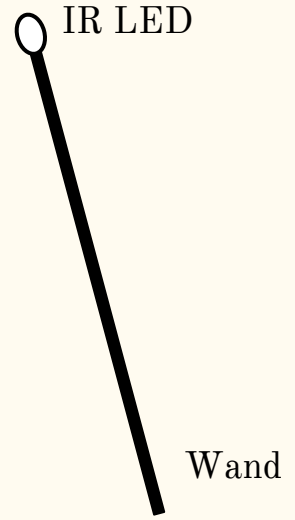
# Camera Module



Camera



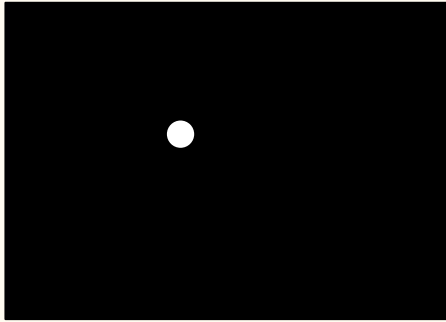
Floppy Disk  
(IR Filter)



Wand



# Camera Module



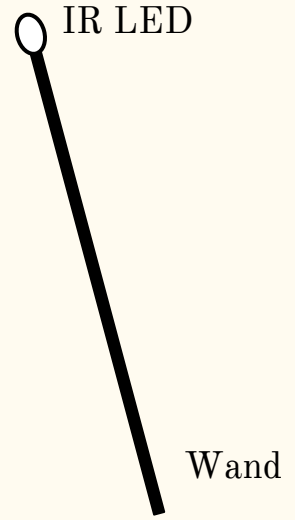
Visual Data



Camera



Floppy Disk  
(IR Filter)




IR LED

Wand

# Wand Tracking Module

1	2	3
4	5	6



<u>Spell</u>	<u>Sequence</u>	<u>Number</u>
Accio	214	0
Lumos	252	1
Nox	525	2
Wingardium Leviosa	652	3

# Spell Generator Module

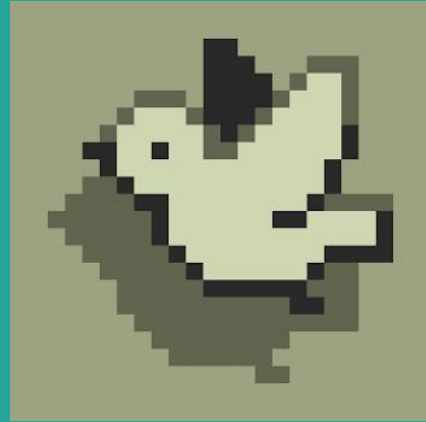
Reaction Generator

Parameters:

- LED
- Color
- Sprite



Sprite Generator



# Timeline and Goals

November 11	Wand-Tracking	Lotta
November 11	Make a Spell	Marayna
November 18	Add Spells	Lotta
November 18	Add two-player Capabilities	Marayna
December 14	Dueling Game Polish	Both