



# Hardware Music Reader

JAMIE, IAN, ROBBIE

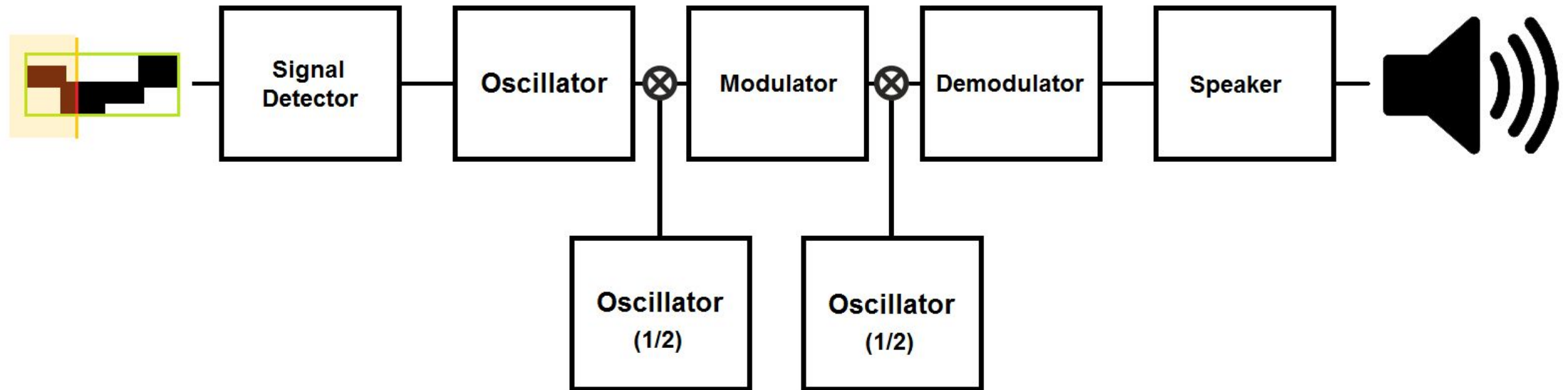
# Motivation

- Our idea is to build something that can play 'sheet-music'
  - Senses binary activation (black/white) on paper
  - Generates a signal at a 'note'
  - Modifies the signal to make it sound good (add a harmonic)
- 
- We wanted to do a hardware implementation of concepts we learned

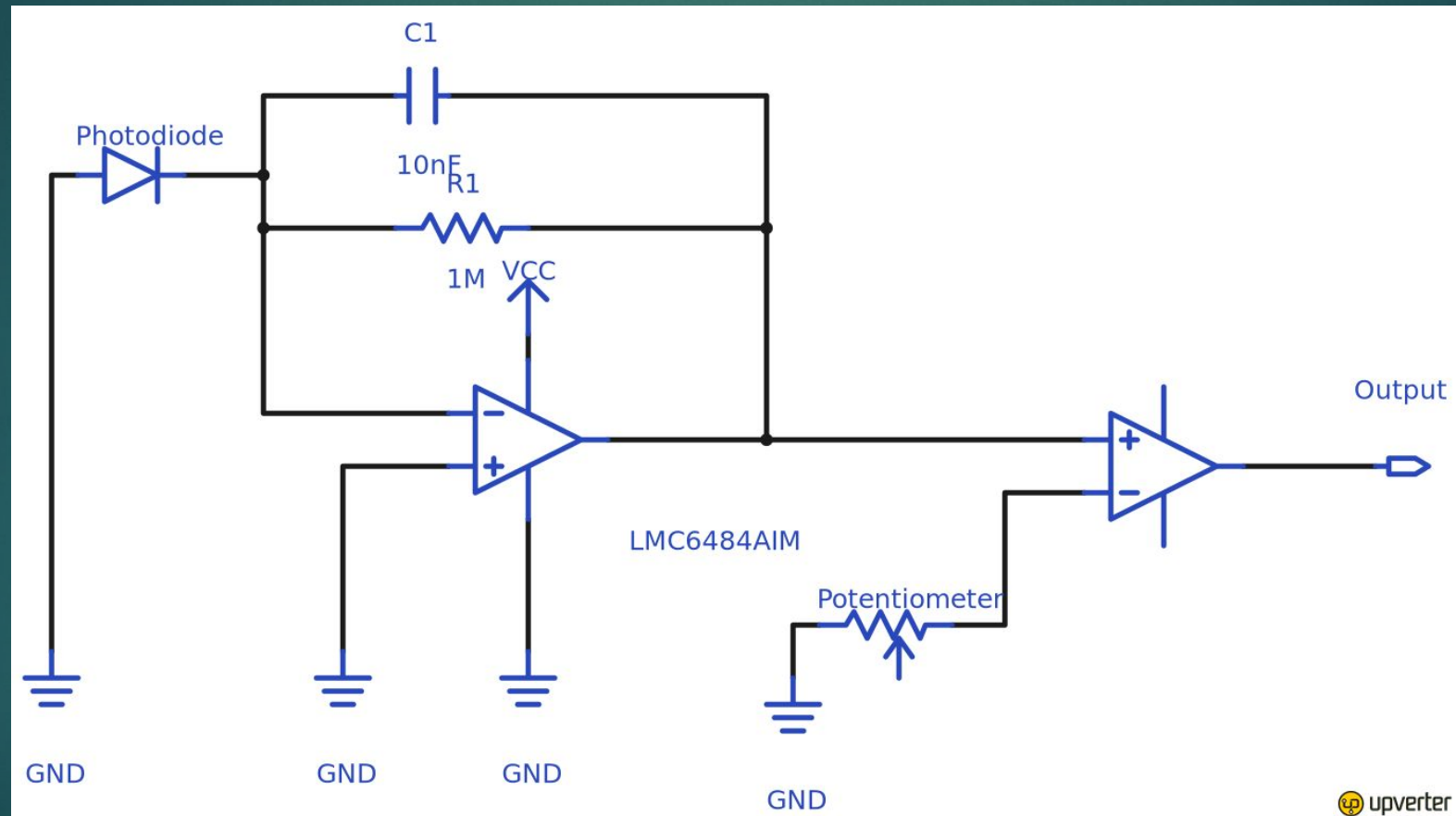
# Current Progress

- Generate tone based on paper
- Can change the signal, but not in the right ways

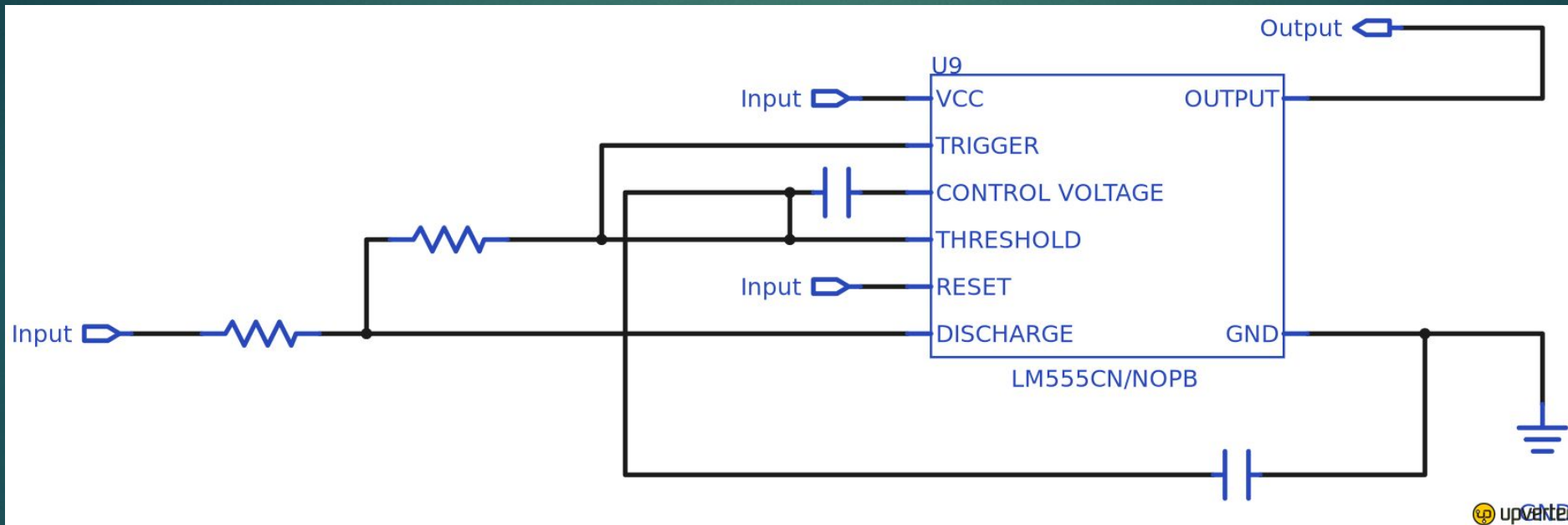
# Block Diagram



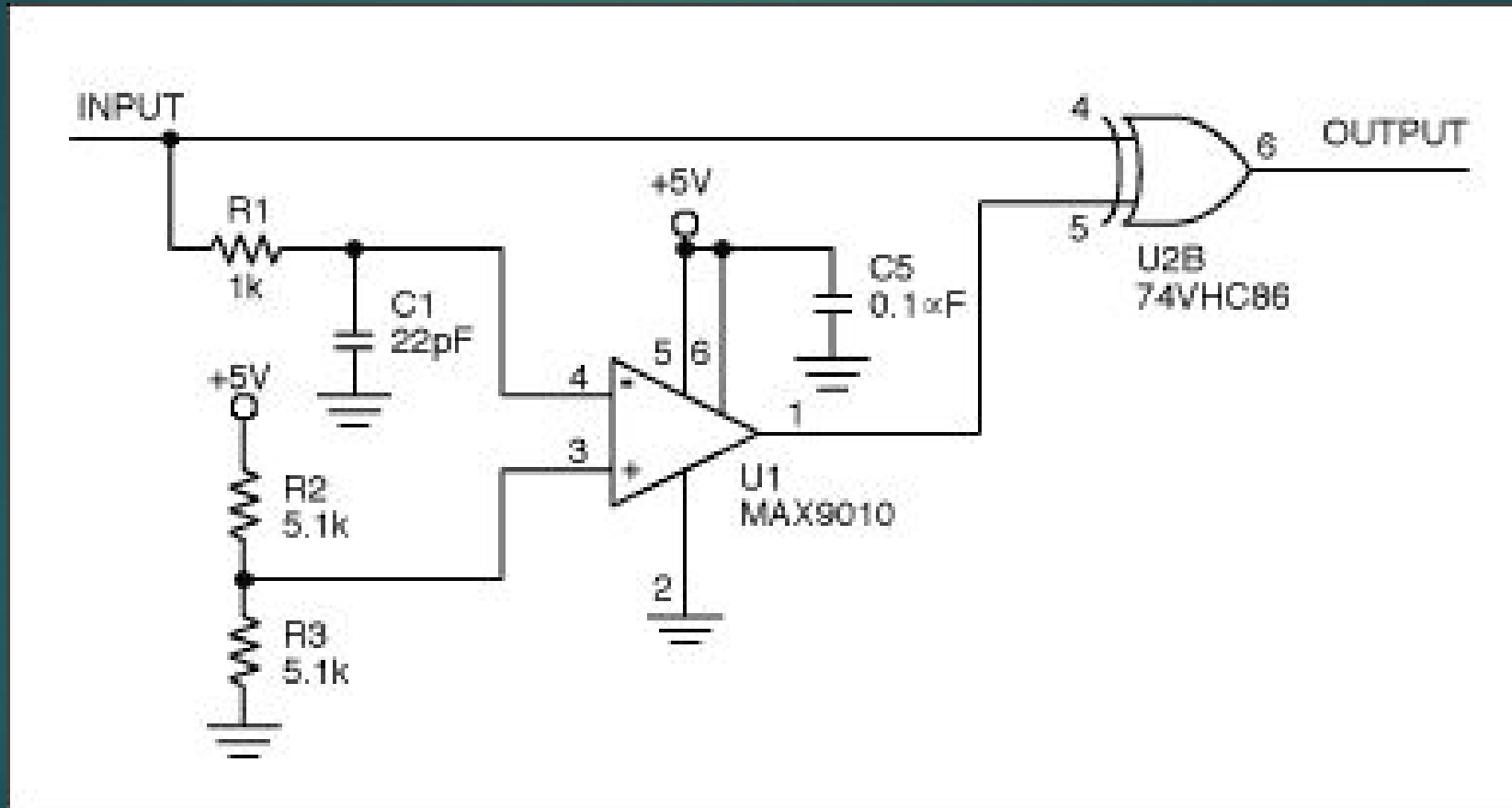
# Read the paper, convert to binary



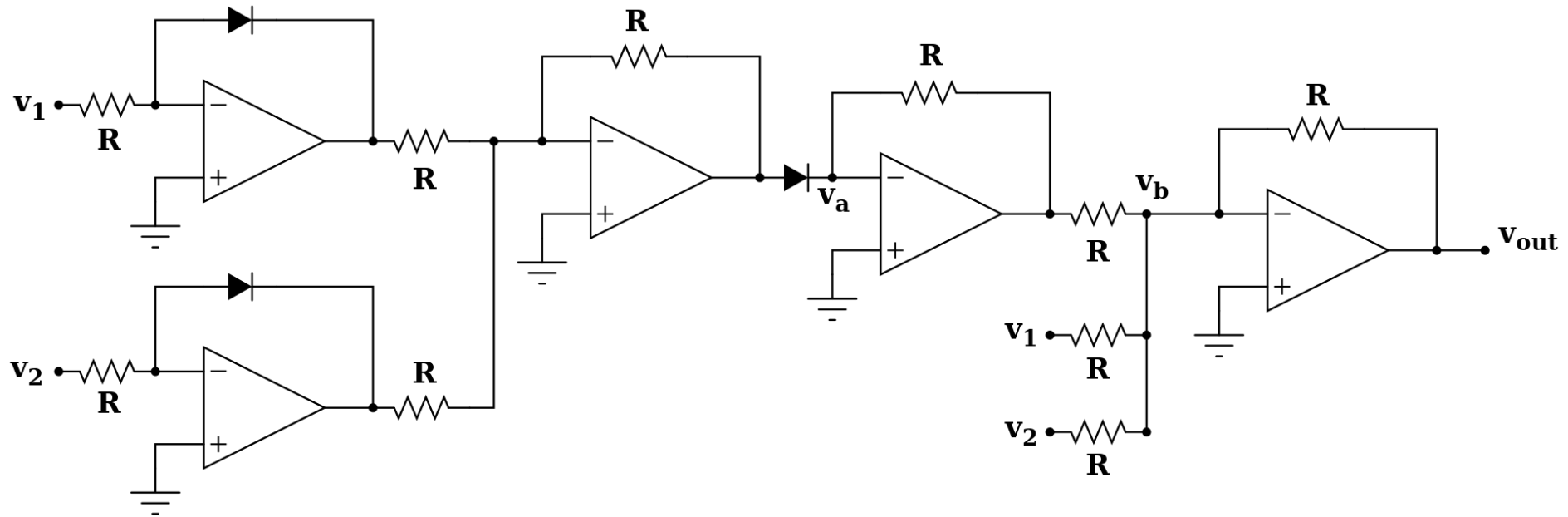
# Generate a particular tone



# Proposed frequency doubler



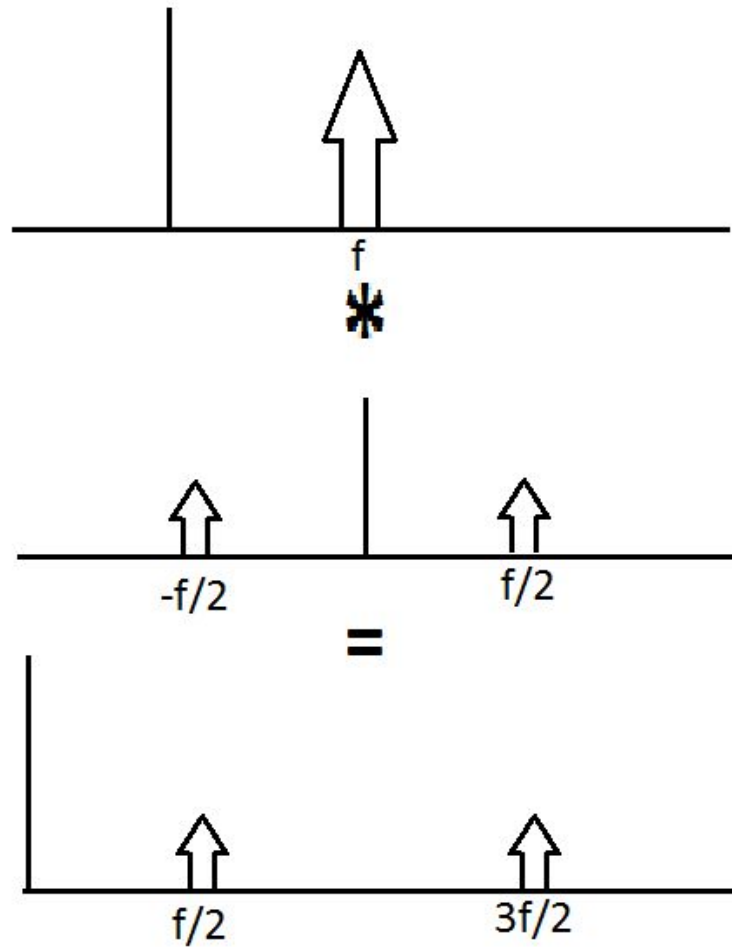
# Adding the Harmonics



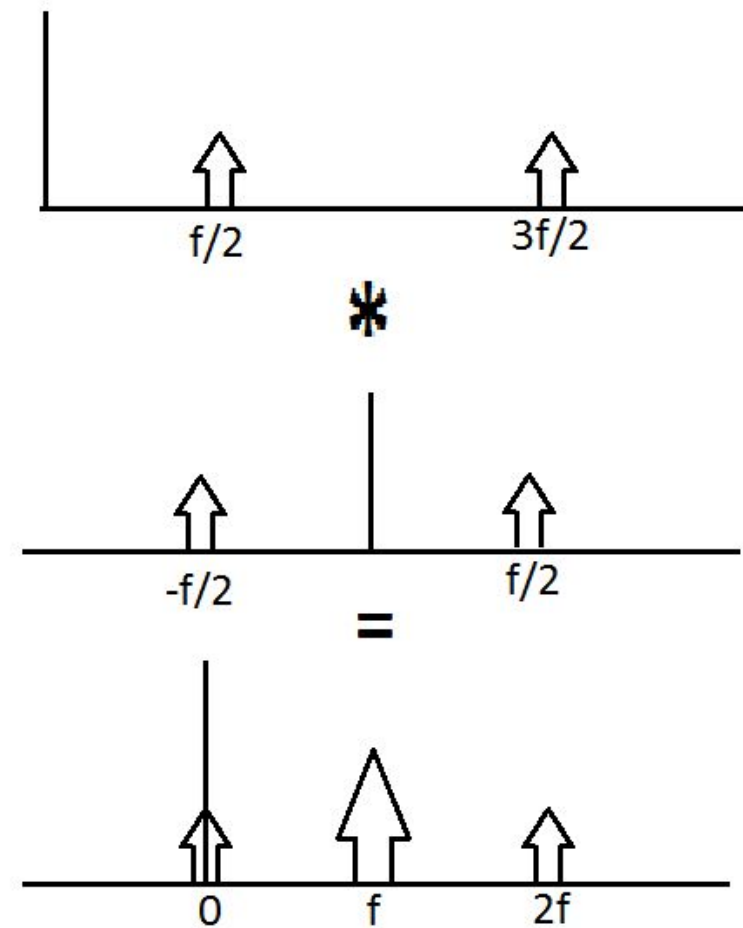
Voltage Multiplier



# Modulation



# Demodulation



# What we've learned

- Plenty about integrated circuits and electrical engineering
- How to have a 555 timer to make a tone
- We can turn the signal from a photodiode to binary
- How to do the hardware implementation for modulation

# What's left

- Generate the harmonics
- Implement a voltage multiplier

# Relation to SigSys

- We are modulating the signal to give it harmonics
- This will improve the sound and make it less harsh