MIT
Dance Dance Revolution

Anna Ayuso and Sharmeen Browarek

Introduction to DDR

Images removed due to copyright restrictions.
Please see any photo of a DDR machine, such as
http://upload.wikimedia.org/wikipedia/commons/0/0c/DDR_US_1st.jpg

- Foot – eye coordination
- Hit arrows when they match up on screen
- We use IR sensors
- One song, 3 difficulty levels

Game Overview

- **IR Sensor Info**

  determines location of user's feet

- **Control Unit**

  controls game flow

- **Audio**

  handles song representation as arrows and audio playback

- **Video**

  produces display viewed by user

Data Flow
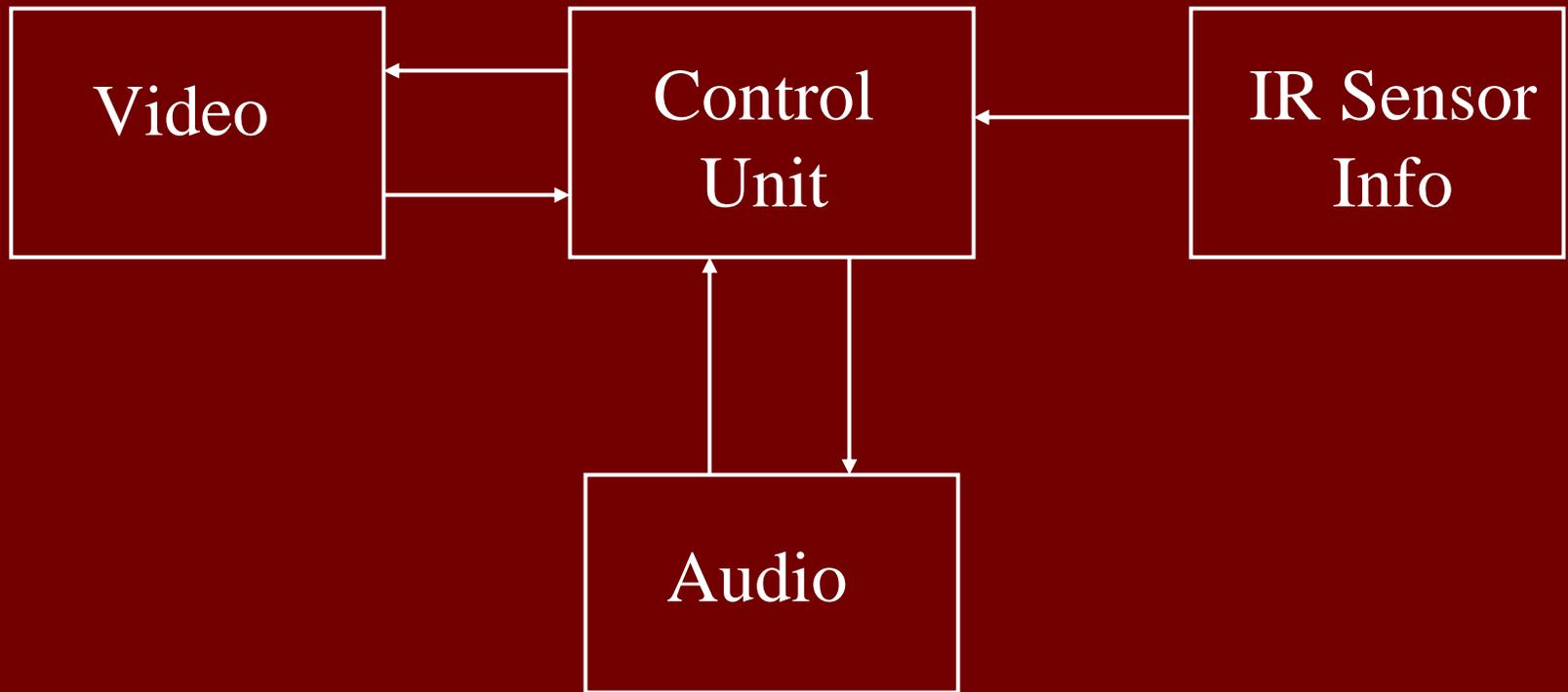
Video ~ Menu Screen

MIT Dance Dance Revolution!
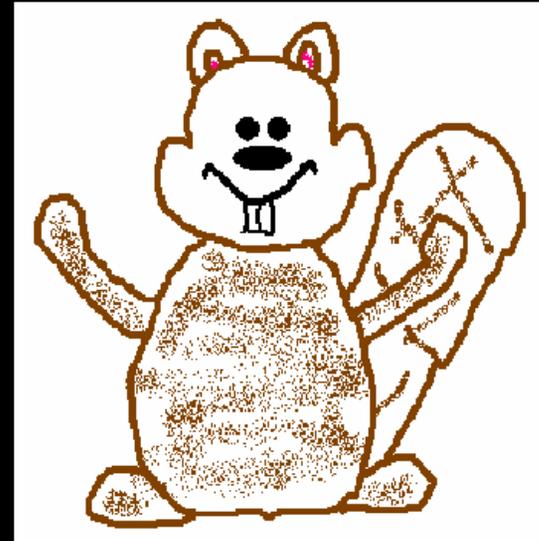
Song: Mr. Roboto, Styx

Difficulty Level:
      Easy
      Medium
▶ Hard

Video ~ In-Game Mode

Video ~ End-Game Mode

Infrared Sensors
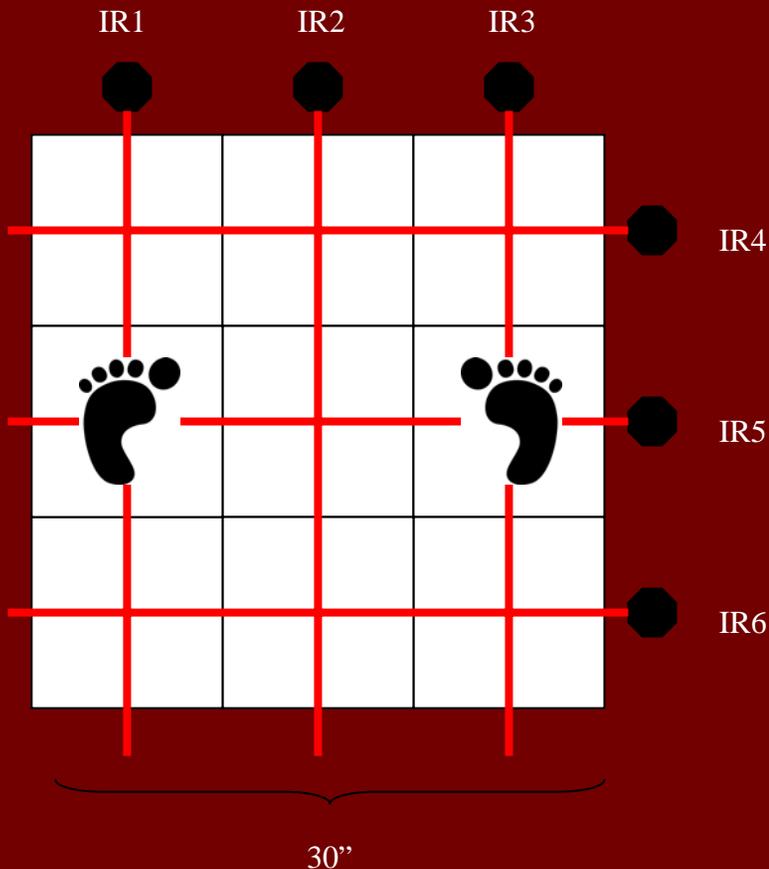
- **Setup:**
  - -3x3 grid of sensors allows location of foot to be found
- **Hardware:**

 -Sharp GP2Y0D02YK IR Sensor - 31" Trigger (hobbyengineering.com)

  -Produces digital output indicating if beam is interrupted
- **Considerations:**
  - -Delay due to wires and the IR trigger device

Control Unit

- **Two main functions:**
  - Game mode
  - Scoring
- **Game mode:**
  - Sends a 2-bit signal to determine mode
- **Scoring:**
  - Calculates score based on how close arrows are when position is reached
  - Accuracy level displayed during game, overall score given at end.

Reset Location!

IR1   IR2   IR3

IR4

IR5

IR6
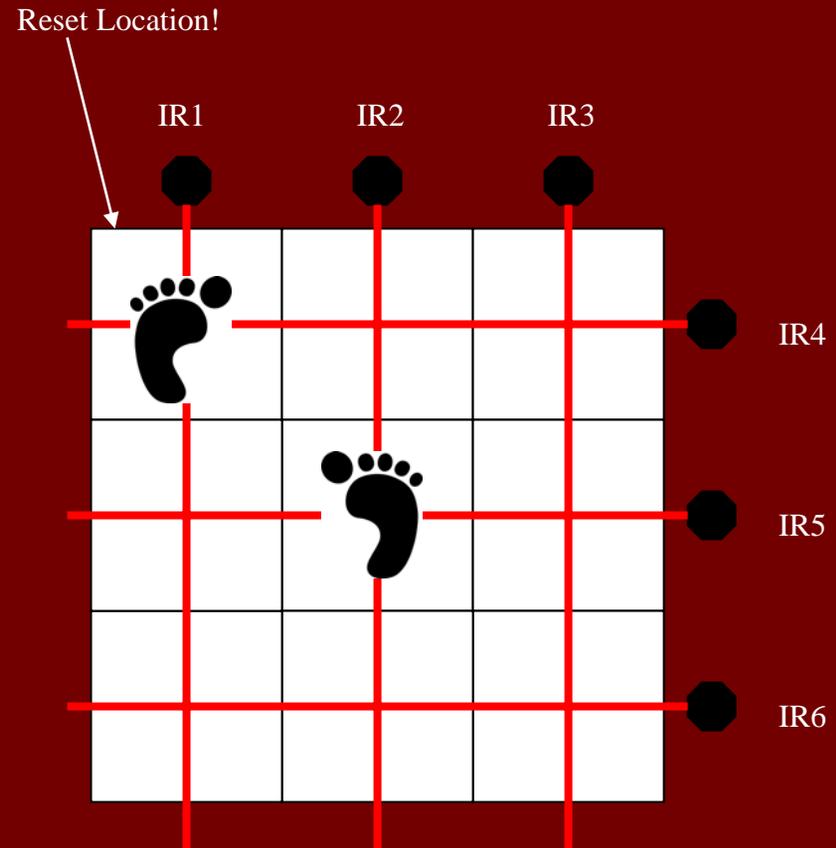
Audio

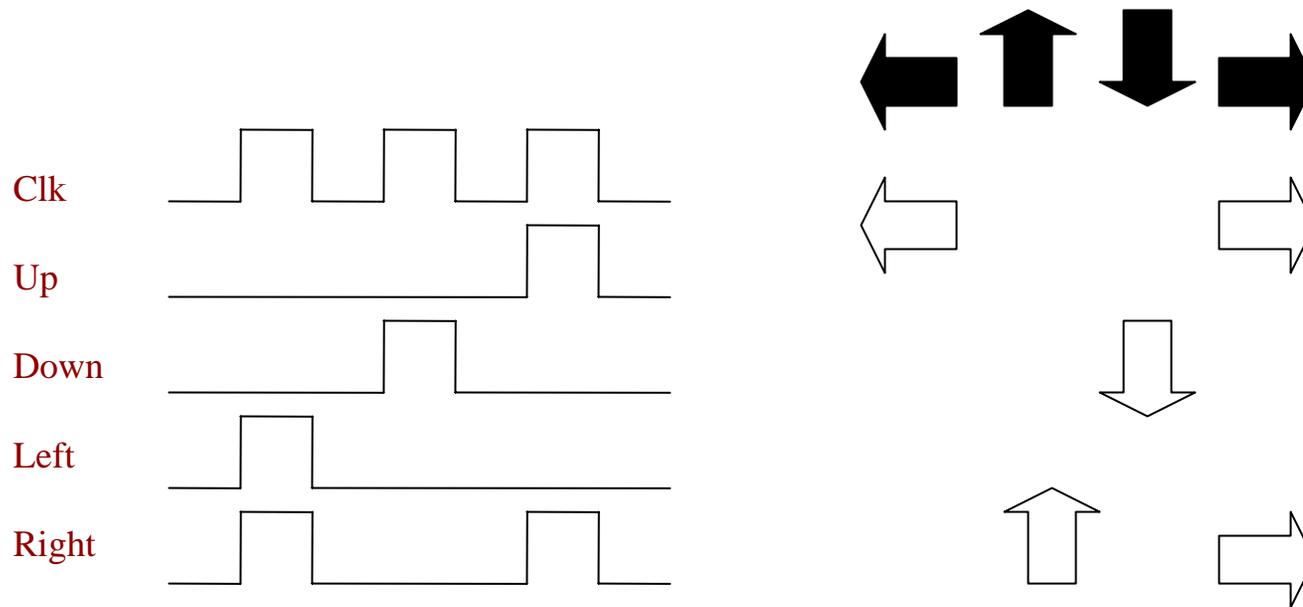| beat	row
1	0101
2	1000
n	1001

- **Audio Playback**
  - Song stored in ZBT memory
  - Played through speakers using AC'97 codec
- **Representation of song as arrows**
  - Row of arrows represented as a 4-bit number
  - Each row corresponds to a beat of the song
  - [left arrow, up arrow, down arrow, right arrow]
  - If arrow represented by a 1, then it will appear in the row

Song Sample

The End!

- Any questions??