

# GD50

## Lecture 1: Flappy Bird

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# Slides

<https://cs50.github.io/games/lectures>

# Topics

- Images (Sprites)
- Infinite Scrolling
- “Games Are Illusions”
- Procedural Generation
- State Machines
- Mouse Input

Downloading demo code

<https://github.com/games50/fifty-bird>

# Optional Reading, ftw

- How to Make an RPG, by Dan Schuller
  - <https://howtomakeanrpg.com/>
- Game Programming Patterns, by Robert Nystrom
  - <http://gameprogrammingpatterns.com/>

# Our Goal



bird0

“The Day-0 Update”



# bird0: New Functions

- `love.graphics.newImage(path)`
  - Loads an image from a graphics file (JPEG, PNG, GIF, etc.), storing it in an object we can draw to the screen.



Demo time!

bird1

"The Parallax Update"



Demo time!

# Games Are Illusions

Shesez (Boundary Break)

<https://www.youtube.com/channel/UCHTnEwQKNwm49CQeCVZogMw>

<https://www.youtu.be/HUgE9L7V4oY>

bird2

"The Bird Update"



Demo time!

bird3

"The Gravity Update"



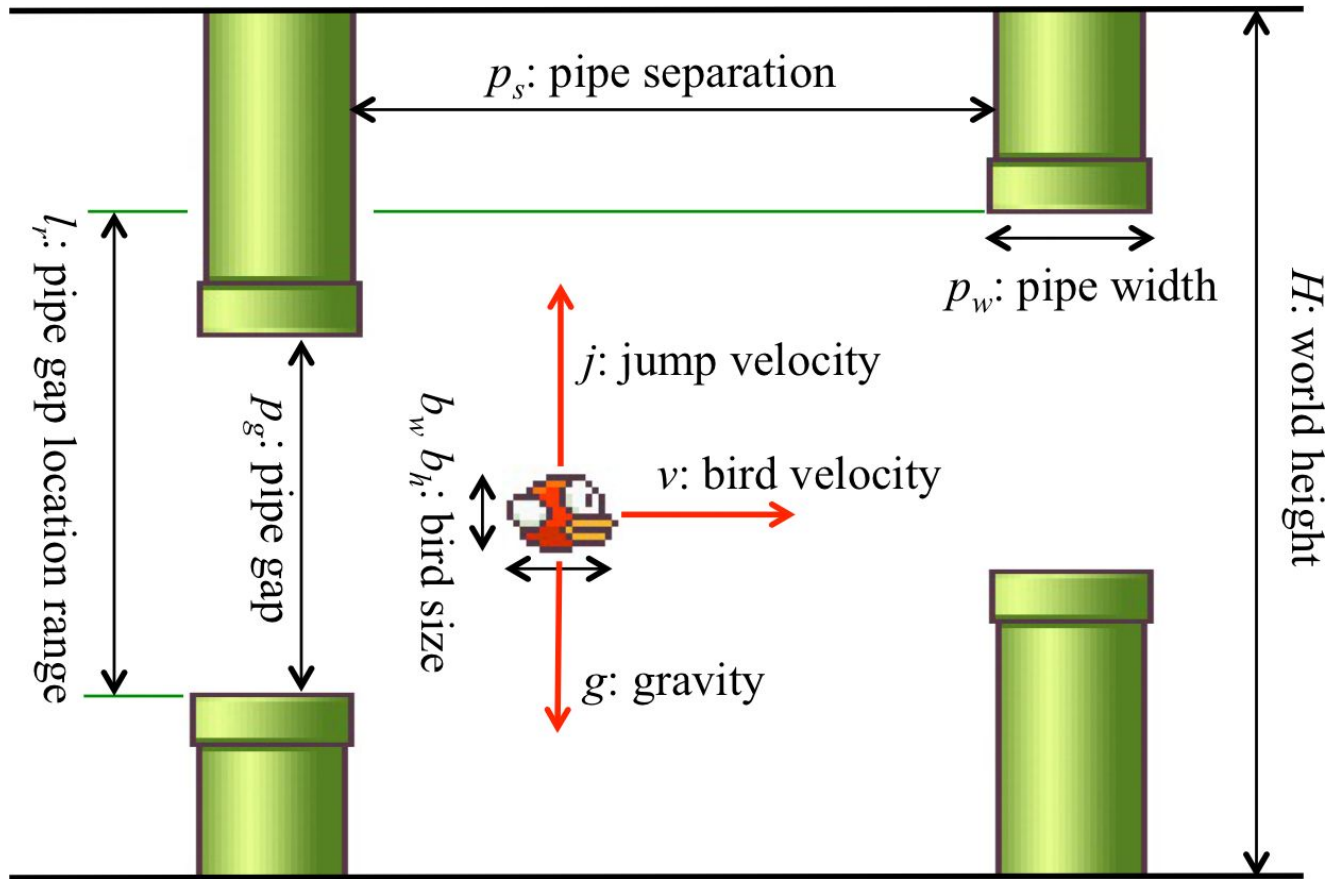


Demo time!

bird4

“The Anti-Gravity Update”





Demo time!

bird5

“The Infinite Pipe Update”



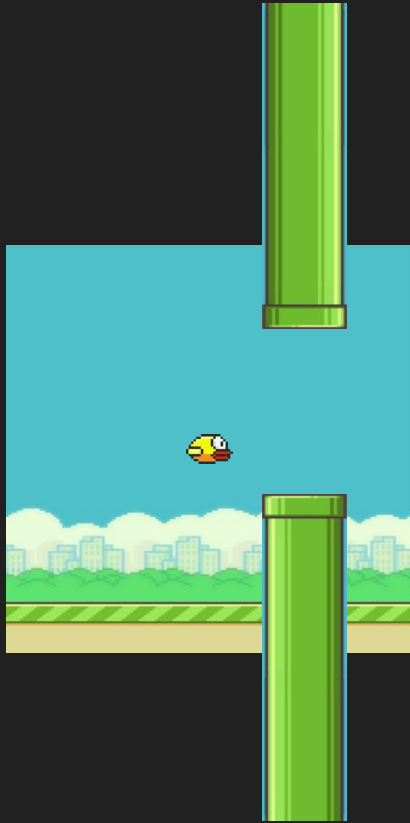
Demo time!

bird6

"The PipePair Update"



Dead Zone



Spawn Zone



Demo time!

bird?

“The Collision Update”



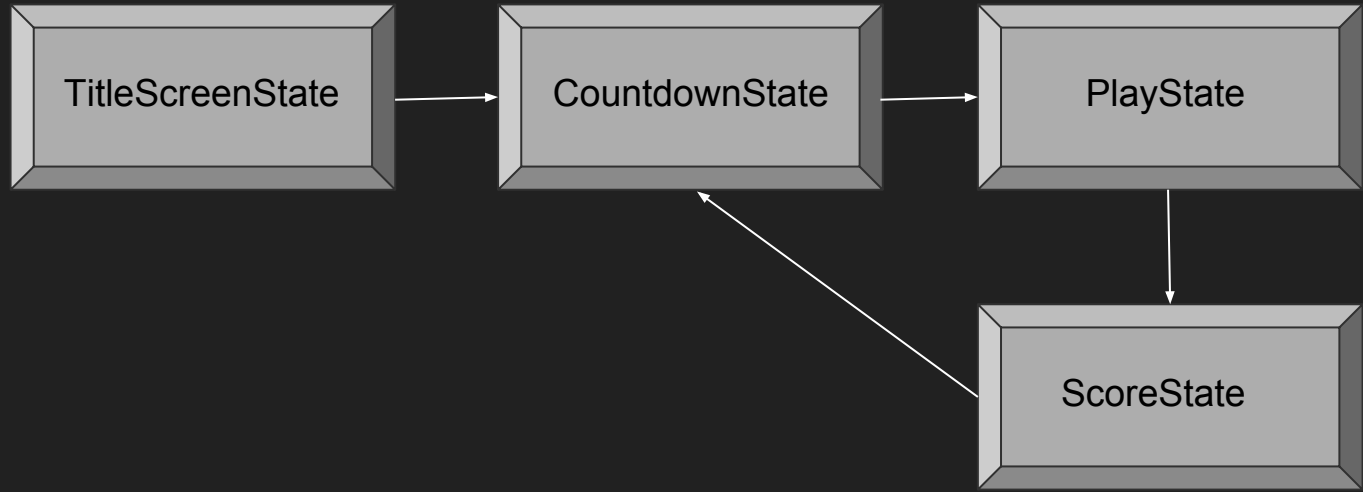
Demo time!

# birds

“The State Machine Update”



# Flappy Bird State Machine



Demo time!

bird9

“The Score Update”



Demo time!



bird10

“The Countdown Update”



Demo time!

bird11

“The Audio Update”



Demo time!

bird12

“The Mouse Update”



## bird12: New Functions

- `love.mousepressed(x, y, button)`

-Callback fired by LÖVE2D every time a mouse button is pressed; also gives us the (X, Y) of where the mouse cursor was at the time of the button press.

Demo time!

# Next Time...

- Sprite Sheets
- Procedural Layouts
- Levels
- Player Health
- Particle Systems
- Fancier Collision Detection
- Persistent Save Data



# Assignment 1

- Make pipe gaps slightly random.
- Make pipe intervals slightly random.
- Award players a “medal” based on their score, using images.
- Implement a pause feature.

See you next time!

