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What is Kirby?



Initial Ideas

Arm Wrestling Game
vs.
Kirby Transformation
Game



DEMO





6



BGM

```
;;; The full bgm, the main and underlying bgm combined, repeated 20 times.  
(description "Play Me!")  
(repeat 20  
  (mod (tempo qn 180)  
        (par (mod (dynamics 80) (mod (instrument 60) main-bgm))  
              (mod (dynamics 10) (mod (instrument 57) underlying-bgm))))
```

Image credit: Paul Lim



7 Animation

Effects when clicking power balls

- Animation
 - Change Kirby
- Sound

```
; -----
;; Sound Effect |
;

;; The sound effect for clicking on a ball, without mod percussion.
(define largest-sound
  (lambda (midi-note)
    (mod (dynamics 127) (note midi-note qn)))

;; The sound effect for clicking on a ball, with mod percussion.
(define boom-end-sound
  (mod percussion (largest-sound 39)))
```

Clicking Power Balls

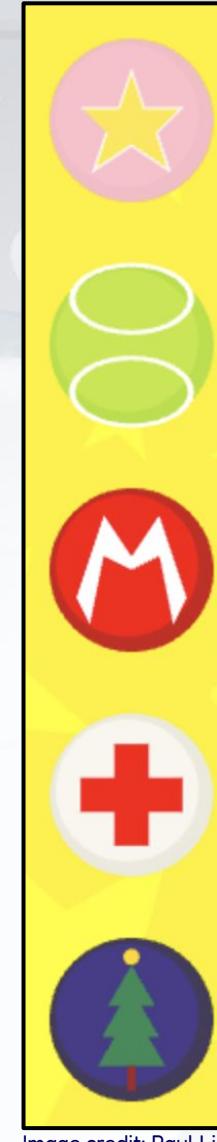


Image credit: Paul Lim



```
; The beginning page: a page with text descriptions on how to play the game.  
;; When user clicks on a ball, draws the animation for each kirby.  
(ignore  
(animate-with  
(lambda (time)  
(begin  
(draw-drawing canv basic-background 0 0)  
(cond  
[(equal? (vector-ref current-kirby 0) "title")  
(begin  
(draw-text canv "Kirby Transformation!" 50 180 "solid" "hotpink" "60px comic sans ms") 0 0  
(draw-text canv "Click on balls to make Kirby appear!" 115 230 "solid" "hotpink" "30px comic sans ms") 0 0  
(draw-text canv "Instruction Manual" 250 300 "solid" "hotpink" "20px comic sans ms") 0 0  
(draw-text canv ".Use the mouse to interact with the game." 140 340 "solid" "hotpink" "20px Courier") 0 0  
(draw-text canv ".Click on a power ball to transform Kirby." 140 370 "solid" "hotpink" "20px Courier") 0 0  
(draw-text canv ".Click on the pink power ball to return." 140 400 "solid" "hotpink" "20px Courier") 0 0  
(draw-text canv ".Enjoy and have fun!" 140 430 "solid" "hotpink" "20px Courier") 0 0)]  
[(equal? (vector-ref current-kirby 0) "basic")  
(begin  
(draw-drawing canv basic-background 0 0)  
(draw-drawing canv  
    (if (odd? (round (* 60 time)))  
        (basic-kirby 120)  
        (basic-kirby-offset 120))  
    180  
    180))]  
[(equal? (vector-ref current-kirby 0) "tennis")  
(begin  
(draw-drawing canv basic-background 0 0)  
(draw-drawing canv  
    (if (odd? (round (* 60 time)))  
        (tennis-kirby-ball-down 120)  
        (tennis-kirby-ball-up 120))
```

Title and Instruction Manual



Kirby Transformation!

Click on balls to make Kirby appear!

Instruction Manual

- Use the mouse to interact with the game.
- Click on a power ball to transform Kirby.
- Click on the pink power ball to return.
- Enjoy and have fun!

Change Kirby

```
; -----
;;; Ball Click Effect|
; -----  
  
;; The vector for determining the state of the displayed kirby.  
(define current-kirby  
  (vector "title"))  
  
;; When the user clicks on a ball, kirby transforms into the type of kirby described  
;; by the ball, with a short sound effect. If the user clicks anywhere else, kirby  
;; remains the same.  
(ignore  
  (canvas-onclick canv  
    (lambda (x y)  
      (begin  
        (cond  
          [(and (and (<= 700 x) (<= x 780)) (and (<= 40 y) (<= y 120)))  
            (begin  
              (play-composition boom-end-sound)  
              (vector-set! current-kirby 0 "basic"))]  
          [(and (and (<= 700 x) (<= x 780)) (and (<= 150 y) (<= y 230)))  
            (begin|  
              (play-composition boom-end-sound)  
              (vector-set! current-kirby 0 "tennis"))]
```

Change Kirby

```
;; The beginning page: a page with text descriptions on how to play the game.  
;; When user clicks on a ball, draws the animation for each kirby.  
(ignore  
  (animate-with  
    (lambda (time)  
      (begin  
        (draw-drawing canv basic-background 0 0)  
        (cond  
          [(equal? (vector-ref current-kirby 0) "basic")  
           (begin  
             (draw-drawing canv basic-background 0 0)  
             (draw-drawing canv  
               (if (odd? (round (* 60 time)))  
                   (basic-kirby 120)  
                   (basic-kirby-offset 120))  
               180  
               180))])
```

Fractals

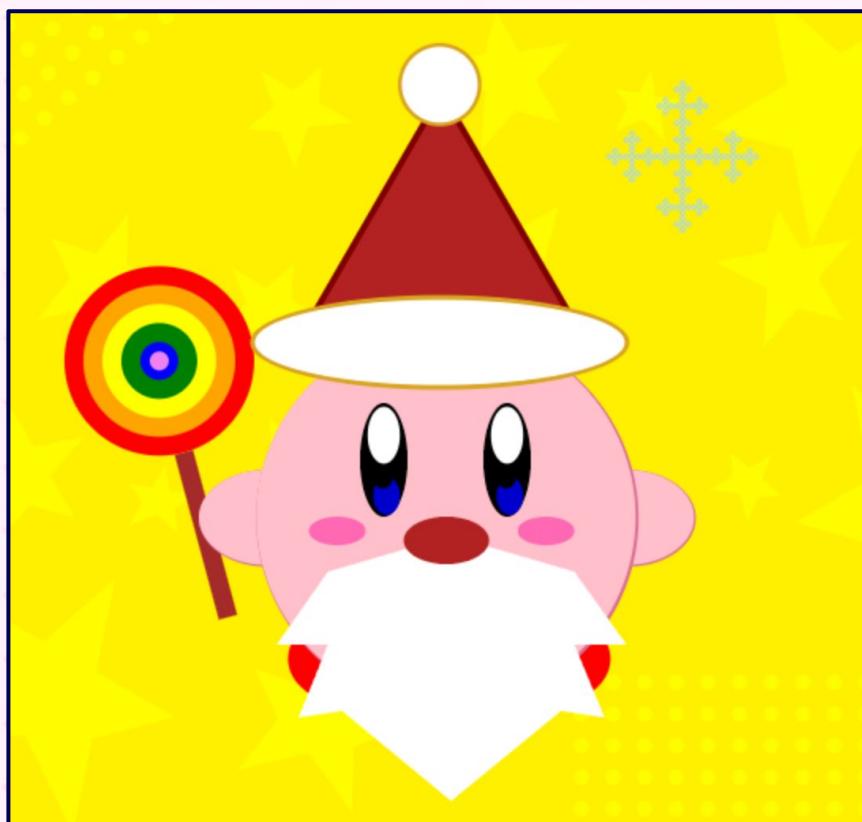
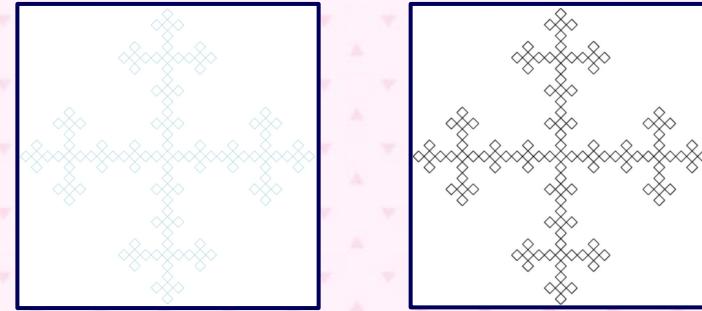
Image credit: Khanh Do

```

;;; (base-snowflake length color n) -> drawing?
;;;   length: integer? (non-negative)
;;;   color: string?
;;;   n: integer? (non-negative)
;;; Draws fractal kolam with the given visual properties. Adapted from mini-project 5.
(define base-snowflake
  (lambda (length color n)
    (match n
      [0 null]
      [1 (diamond length color)])
    [_ (let* ([make-diamond (base-snowflake (/ length 3) color (- n 1))]
             [space (square (/ length 3) "solid" "transparent")]
             [top-bot-row (beside space make-diamond space)]
             [mid-row (beside make-diamond make-diamond make-diamond)])
        (above top-bot-row
              mid-row
              top-bot-row))))))

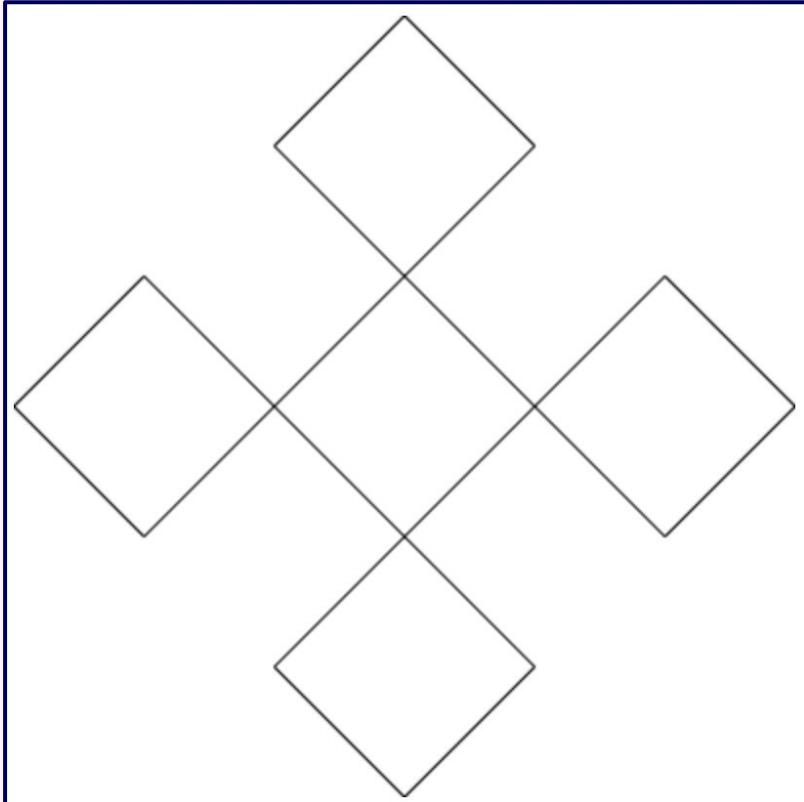
;;; (snowflake size) -> drawing?
;;;   size: integer? (non-negative)
;;; Returns a complete snowflake image.
(define snowflake
  (lambda (size)
    (base-snowflake (* 0.80 size) "lightblue" 4)))

```

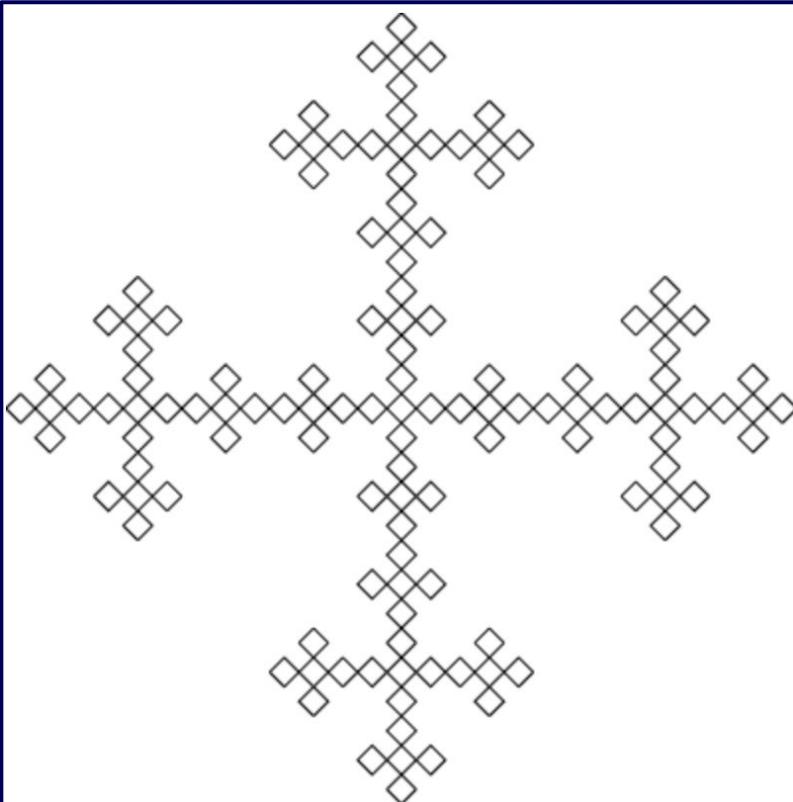


Fractals

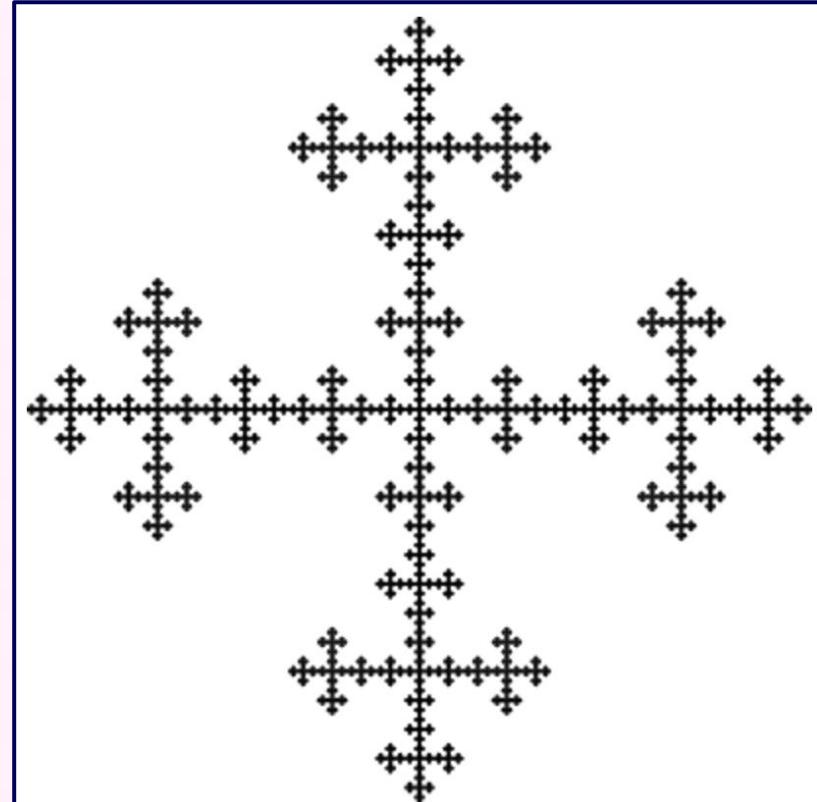
Image credit: Khanh Do



2



4



6

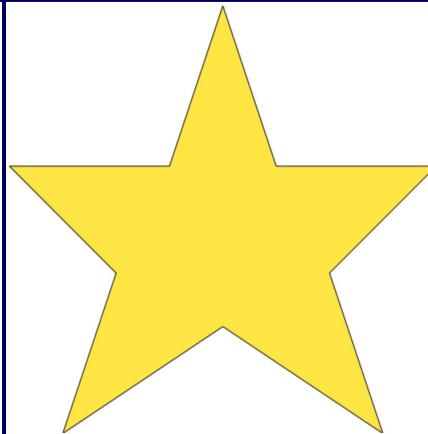
Path

Image credit: Khanh Do

```

;;; (make-star length fill color) -> drawing?
;;;   length: integer?, non-negative
;;;   fill: string?
;;;   color: string?
;;; Draws an image of a star.
(define make-star
  (lambda (length fill color)
    (path length
          length
          (list (pair 0 (* length (/ 3 8))) ; 1
                (pair (* length (/ 3 8)) (* length (/ 3 8))) ; 2
                (pair (/ length 2) 0) ; 3
                (pair (* length (/ 5 8)) (* length (/ 3 8))) ; 4
                (pair length (* length (/ 3 8))) ; 5
                (pair (* length 0.75) (* length (/ 5 8))) ; 6
                (pair (* length (/ 7 8)) length) ; 7
                (pair (/ length 2) (* length 0.75)) ; 8
                (pair (* length (/ 1 8)) length) ; 9
                (pair (* length 0.25) (* length (/ 5 8))) ;10
                (pair 0 (* length (/ 3 8)))
              )
              fill
              color)))

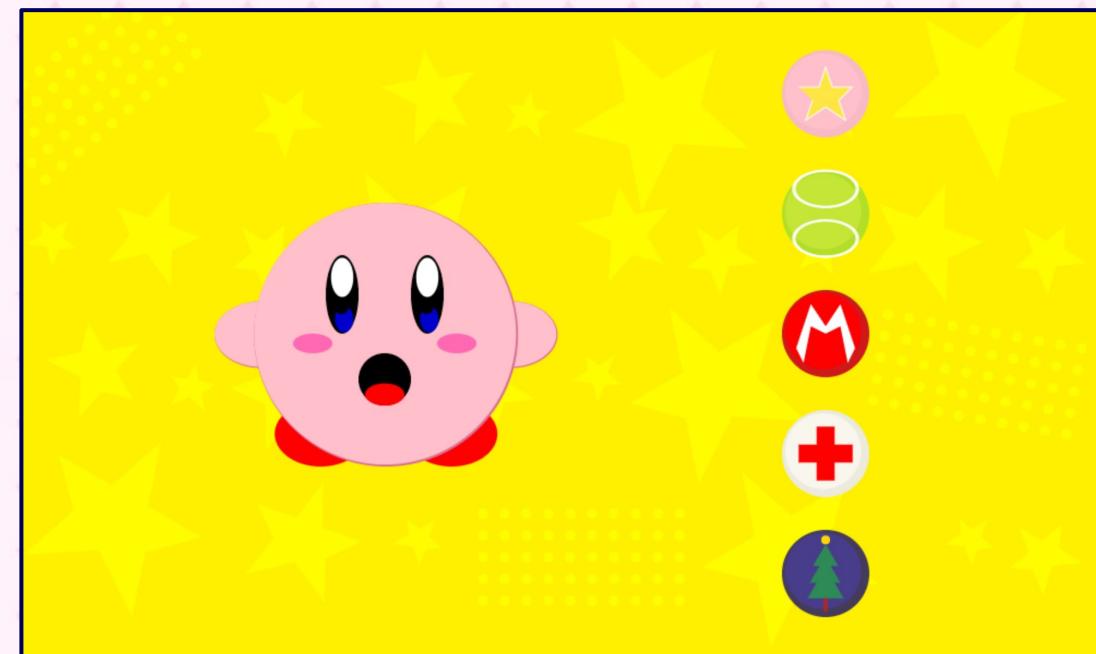
```



```

;;; Basic stars
(define star-0 (star 40 bg-star bg-star))
(define star-1 (star 60 bg-star bg-star))
(define star-2 (star 80 bg-star bg-star))
(define star-3 (star 100 bg-star bg-star))
(define star-4 (star 150 bg-star bg-star))
(define star-5 (star 200 bg-star bg-star))

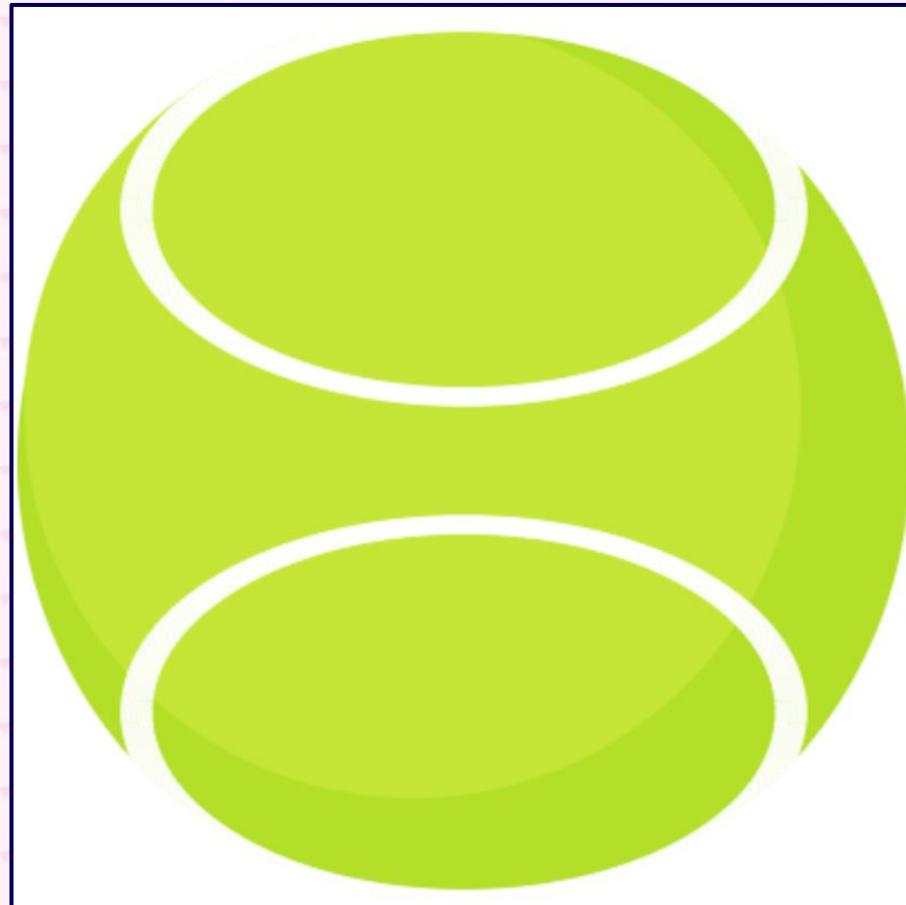
```



Pipeline

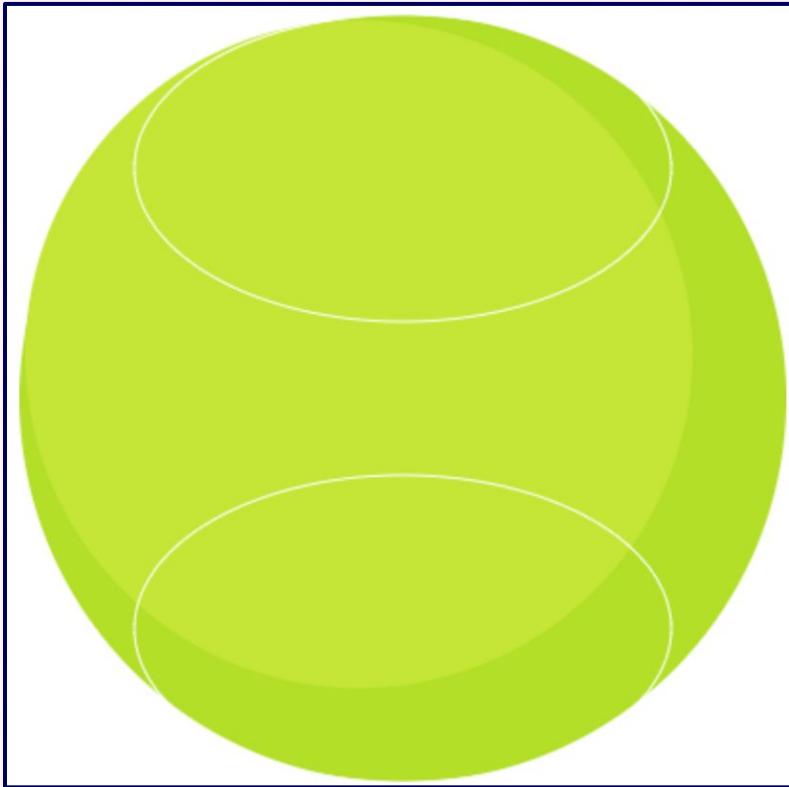
Image credit: Khanh Do

```
;;; (create-curve length) -> drawing?  
;;;   length: integer?, non-negative  
;;; Creates a single, thin white curve.  
(define create-curve  
  (lambda (length)  
    (ellipse (* length 1.4) (* length 0.8) "outline" "white")))  
  
;;; (thick-curve length) -> drawing?  
;;;   length: integer?, non-negative  
;;; Creates a single, thick white curve.  
(define thick-curve  
  (lambda (length)  
    (|> (range length (+ (* 0.1 length) length))  
      (section map create-curve _)  
      (section apply overlay _))))
```

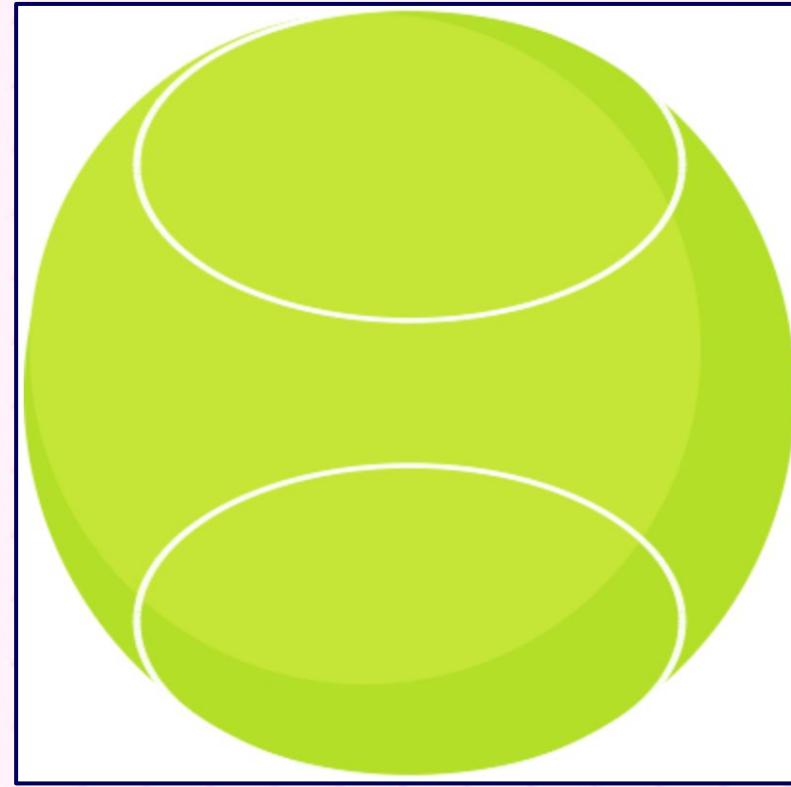


Pipeline

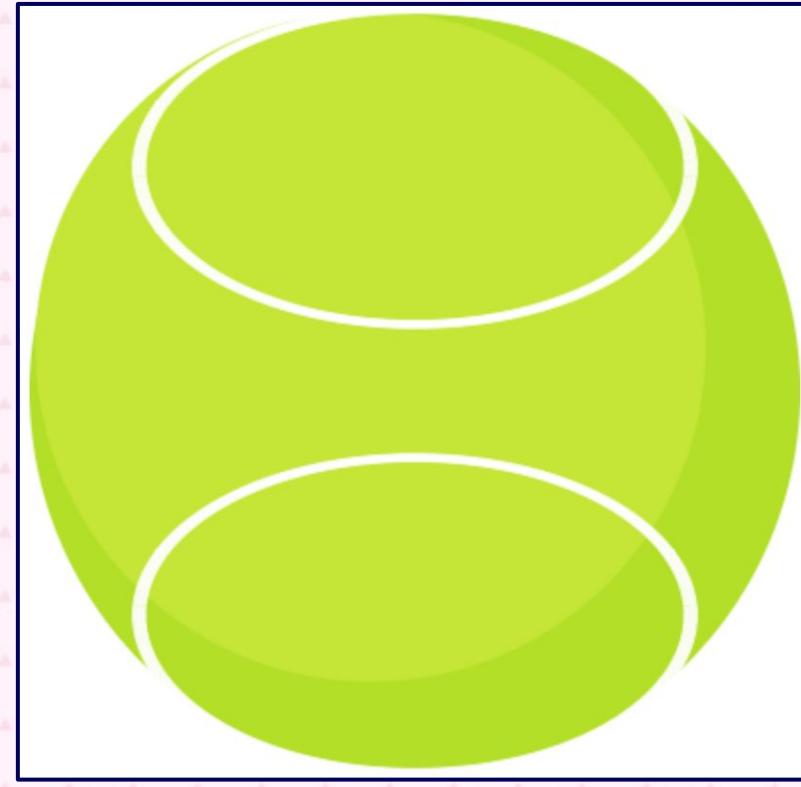
Image credit: Khanh Do



1



5



10

Making Kirby “Size-changable”

```

;;; (santa-kirby size) -> drawing?
;;;   size : integer? (non-negative)
;;; Returns a final Santa kirby drawing.
(define santa-kirby
  (lambda (size)
    (overlay/offset (* -0.97 size) (* 1.1 size)
                  (santa-hat size)
                  (santa-kirby-with-lollipop size))))

```

```

;;; (santa-hat size) -> drawing?
;;;   size : integer? (non-negative)
;;; Returns a final santa hat with the white ball on top of santa-hat-base
(define santa-hat
  (lambda (size)
    (overlay/offset (* -0.78 size) (* 0.23 size)
                  (overlay (circle (* 0.2 size) "solid" "white")
                           (circle (* 0.22 size) "solid" "goldenrod"))
                  (santa-hat-base size))))

```

```

;;; (santa-mustache size) -> drawing?
;;;   size : integer? (non-negative)
;;; Returns a white mustache.
(define santa-mustache
  (lambda (size)
    (path size
          size
          (list (pair (* size 1.15) (* size 0)) ; 1st point
                (pair (* size 1.8) (* size 0.19)) ; 2nd point
                (pair (* size 2.075) (* size 0.575)) ; 3rd point
                (pair (* size 1.8) (* size 0.575)) ; 4th point
                (pair (* size 1.96) (* size 0.96)) ; 5th point
                (pair (* size 1.73) (* size 0.925)) ; 6th point
                (pair (* size 1.15) (* size 1.4)) ; 7th point
                (pair (* size 0.575) (* size 0.925)) ; 8th pint
                (pair (* size 0.345) (* size 0.96)) ; 9 th pint
                (pair (* size 0.5) (* size 0.575)) ; 10th pint
                (pair (* size 0.23) (* size 0.575)) ; 11th pint
                (pair (* size 0.5) (* size 0.19)) ; 12th point
              )
              "solid"
              "white" )))

```

Making Kirby “Size-changable”



(santa-kirby 50)



(santa-kirby 100)



(santa-kirby 150)



Expansions



Ball



Expanding



Effect

Image credit: WiKirby

Expansions



A separate
welcome menu



Actually
vacuums



Image credit: Humayama

Interactive
Game Design

Credits

[https://wikirby.com/w/index.php?title=Balloon&mobileaction=toggle
view desktop](https://wikirby.com/w/index.php?title=Balloon&mobileaction=toggle_view_desktop)

[https://www.deviantart.com/humayama/art/Kirby-Jump-Animation-
501142468](https://www.deviantart.com/humayama/art/Kirby-Jump-Animation-501142468)

<https://tenor.com/view/kirby-consume-gif-22796236>

[https://www.amazon.com/Kirby-Star-Allies-Nintendo-Switch/dp/B07
1JRG7RW](https://www.amazon.com/Kirby-Star-Allies-Nintendo-Switch/dp/B071JRG7RW)



Thank you!

A vibrant illustration featuring a multitude of Kirby characters against a solid pink background. The characters are depicted in various poses and colors, including shades of pink, red, and yellow. Some are holding items like a blue flower or a star-shaped wand. A large, semi-transparent white question mark is centered over the text.

Questions?