THE UNIVERSITY OF CHICAGO

ADVANCED iOS APPLICATION DEVELOPMENT

MPCS 51032 • SPRING 2020 • SESSION 2E

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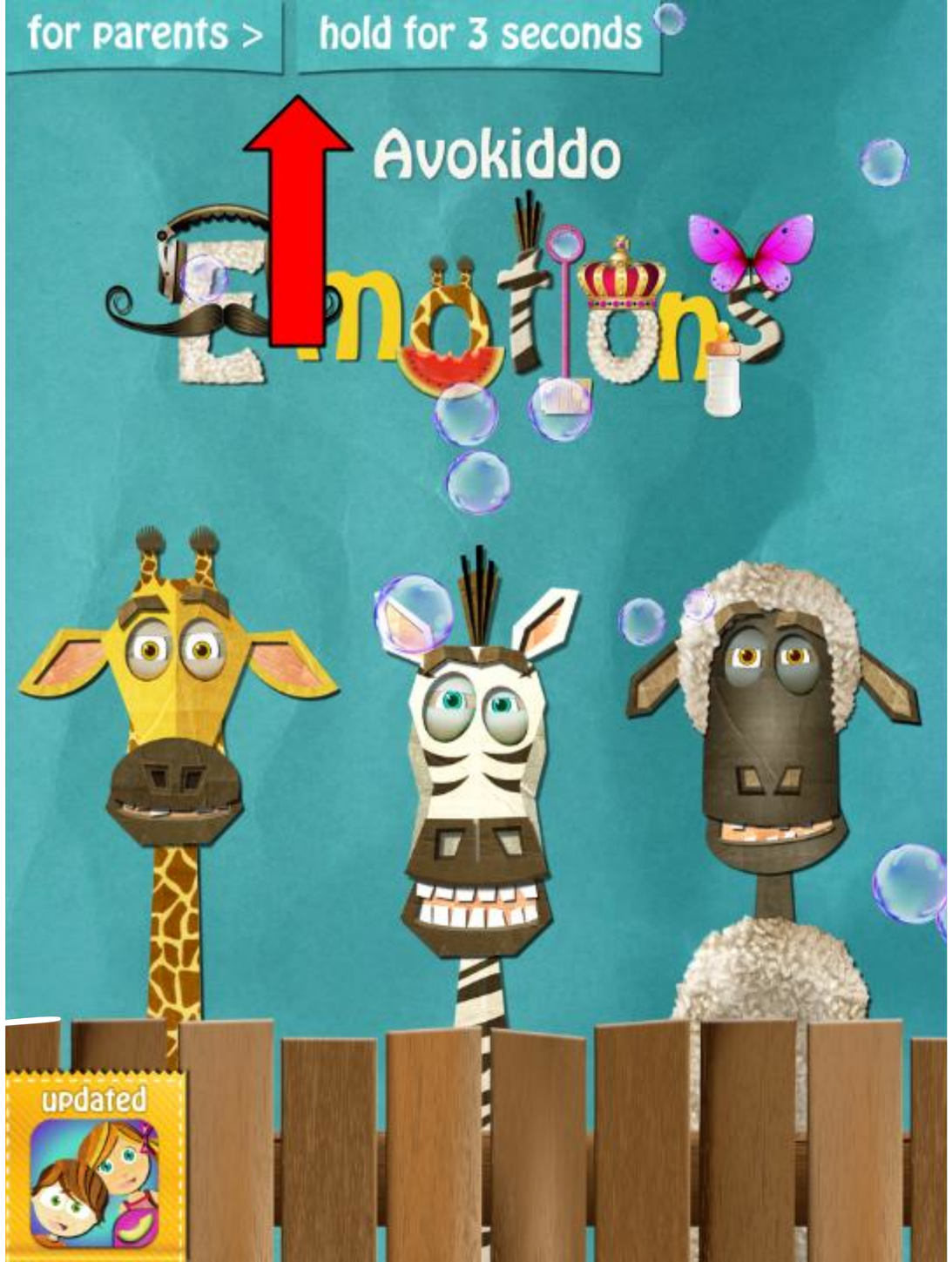
PARENTAL GATE

PARENTAL GATE

SUBTITLE

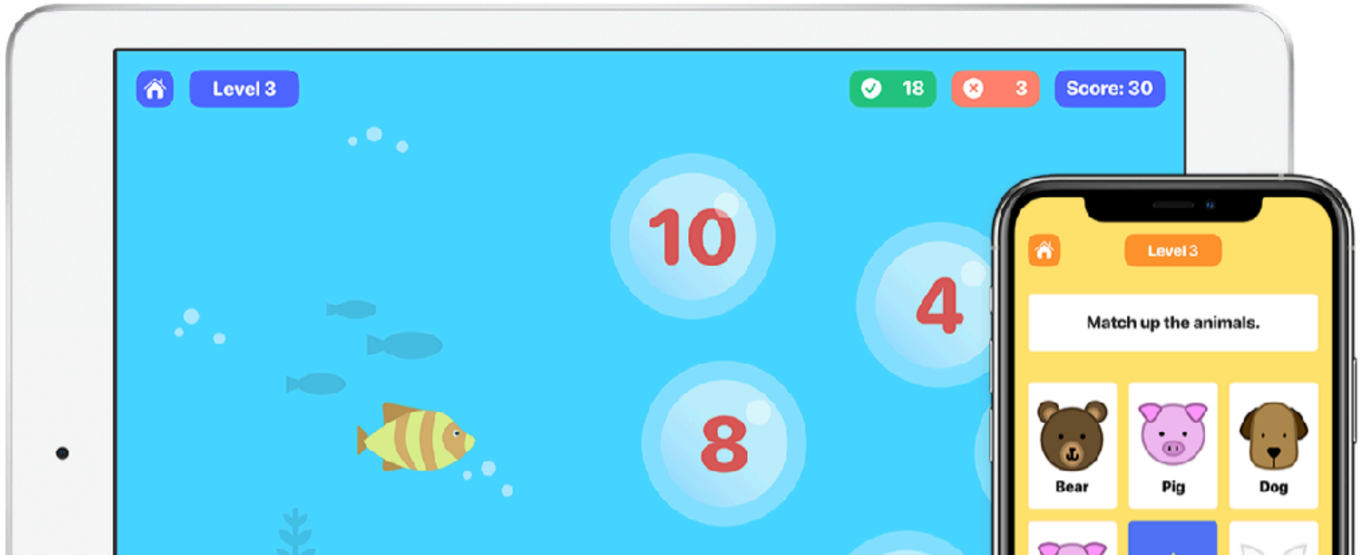
- Features are intended for parents, not kids
  - In-app purchase
  - Signup for news
  - Social Media
- Prevent kids from accessing inappropriate content



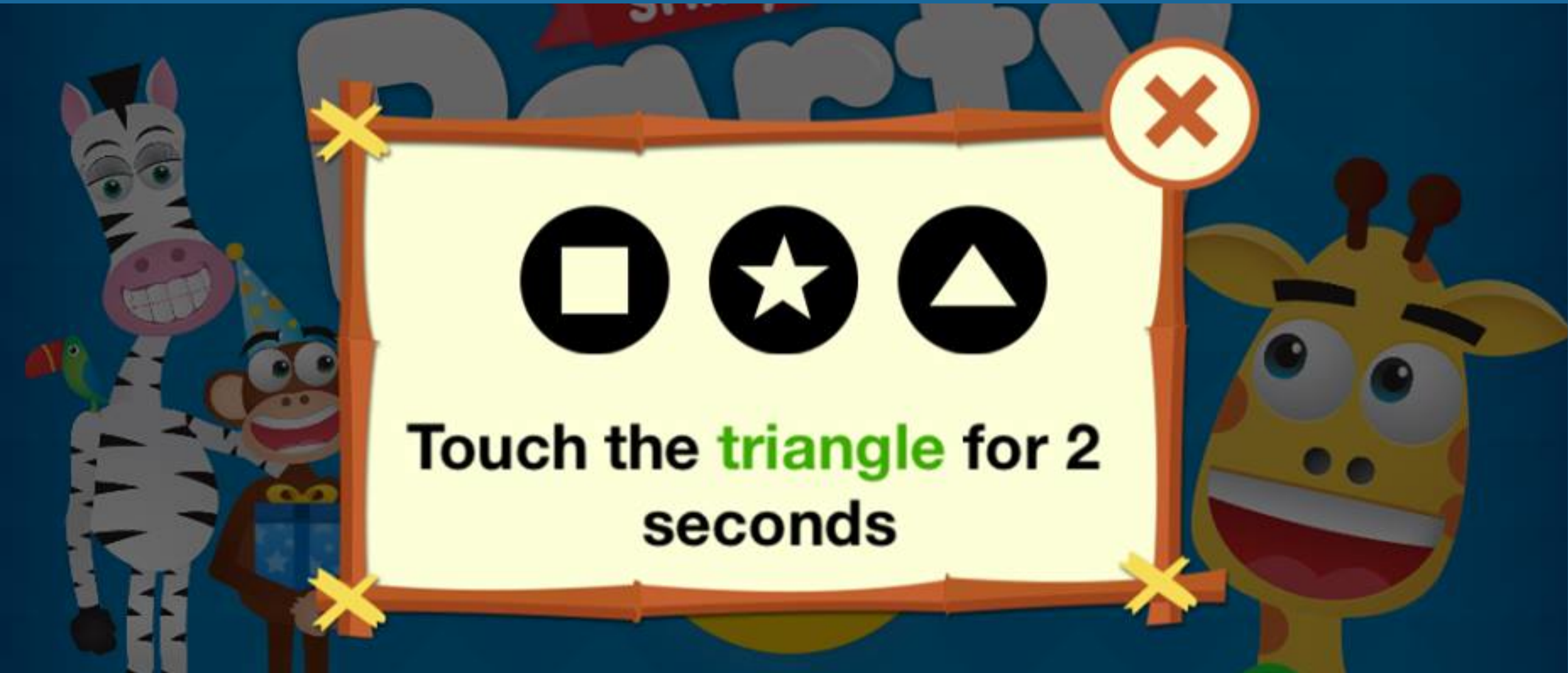
PARENTAL GATE

Building Apps for Kids

You can help kids learn, grow, and have fun with games, interactive stories, educational materials, and more. Find out how to create kids' apps that are safe and trusted by parents.

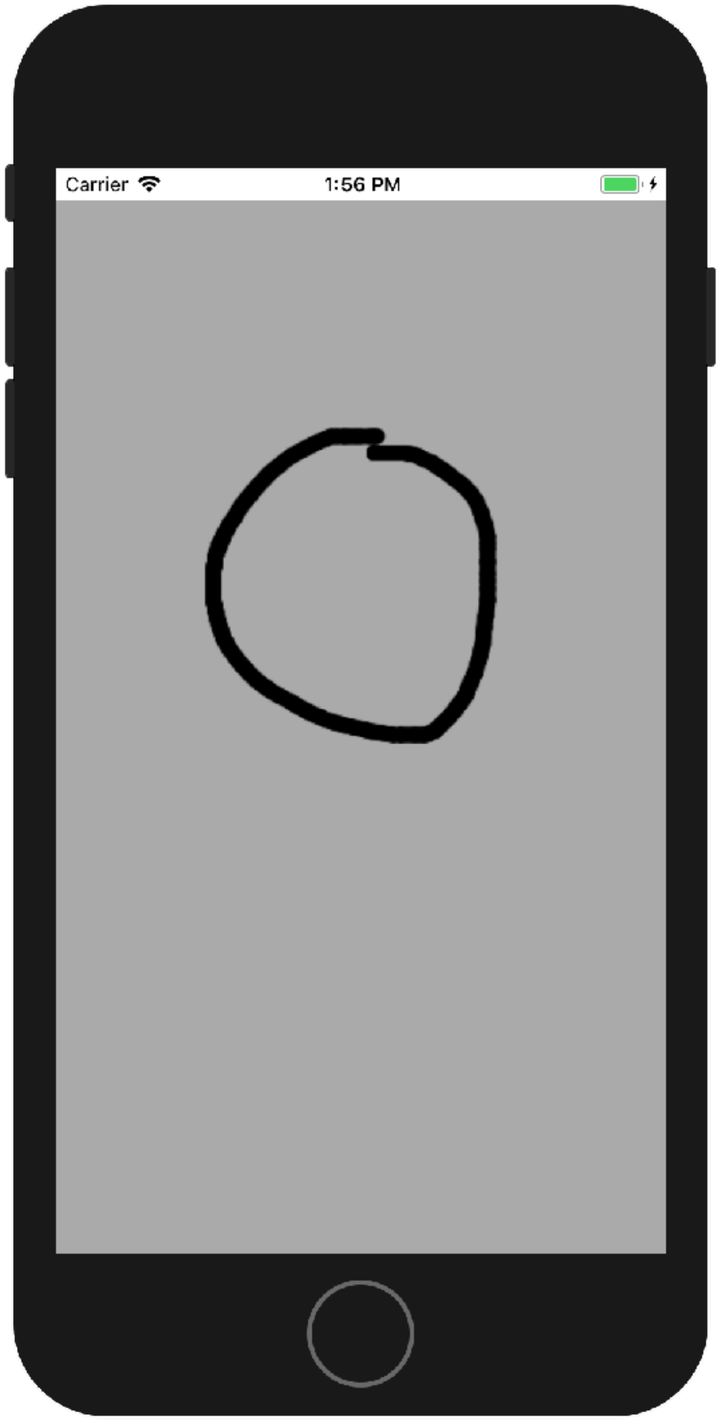


PARENTAL GATE



PARENTAL GATE

- Draw with a finger on the screen to validate
  - Circle
  - Check mark
  - Figure 8
  - ...



PARENTAL GATE

- Track and save touches
  - Began
  - Moved
  - End

```
override func touchesBegan(_ touches: Set<UITouch>, with event: UIEvent?) {
  print("Began")
  drawing = false
  if let touch = touches.first {
    lastPoint = touch.location(in: self.view)
  }
}

override func touchesMoved(_ touches: Set<UITouch>, with event: UIEvent?) {
  print("Moved")

  drawing = true
  if let touch = touches.first {
    let currentPoint = touch.location(in: view)
    drawLineFrom(fromPoint: lastPoint, toPoint: currentPoint)


    lastPoint = currentPoint
    print(currentPoint)
  }
}

override  func touchesEnded(_ touches: Set<UITouch>, with event: UIEvent?) {
  print("Ended")
  if !drawing {
    drawLineFrom(fromPoint: lastPoint, toPoint: lastPoint)
  }
  tempImageView.image = nil
}
```

PARENTAL GATE

- When touch point moves, connect the existing line segment to the new point

```
override func touchesBegan(_ touches: Set<UITouch>, with event: UIEvent?) {
  print("Began")
  drawing = false
  if let touch = touches.first {
    lastPoint = touch.location(in: self.view)
  }
}

override func touchesMoved(_ touches: Set<UITouch>, with event: UIEvent?) {
  print("Moved")

  drawing = true
  if let touch = touches.first {
    let currentPoint = touch.location(in: view)
    drawLineFrom(fromPoint: lastPoint, toPoint: currentPoint)


    lastPoint = currentPoint
    print(currentPoint)
  }
}

override  func touchesEnded(_ touches: Set<UITouch>, with event: UIEvent?) {
  print("Ended")
  if !drawing {
    drawLineFrom(fromPoint: lastPoint, toPoint: lastPoint)
  }
  tempImageView.image = nil
}
```

PARENTAL GATE

- Draw small line segments with CG

```
/// Draw a line segment
func drawLineFrom(fromPoint: CGPoint, toPoint: CGPoint) {

  // Create the canvas
  UIGraphicsBeginImageContext(view.frame.size)
  let context = UIGraphicsGetCurrentContext()
  tempImageView.image?.draw(in: CGRect(x: 0, y: 0,
                                       width: view.frame.size.width,
                                       height: view.frame.size.height))

  // Create line segment
  context!.move(to: CGPoint(x: fromPoint.x, y: fromPoint.y))
  context!.addLine(to: CGPoint(x: toPoint.x, y: toPoint.y))

  // Set the `pen`
  context!.setLineCap(.round)
  context!.setLineWidth(brushWidth)
  context!.setStrokeColor(UIColor.black.cgColor)
  context!.setBlendMode(.normal)

  // Stroke the path with the pen
  context!.strokePath()

  // Copy the canvas on the imageview
  tempImageView.image = UIGraphicsGetImageFromCurrentImageContext()
  tempImageView.alpha = opacity
  UIGraphicsEndImageContext()

}
```

PARENTAL GATE

- Draw small line segments with CG

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/// Draw a line segment
func drawLineFrom(fromPoint: CGPoint, toPoint: CGPoint) {

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  UIGraphicsBeginImageContext(view.frame.size)
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  tempImageView.image?.draw(in: CGRect(x: 0, y: 0,
                                       width: view.frame.size.width,
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  context!.addLine(to: CGPoint(x: toPoint.x, y: toPoint.y))

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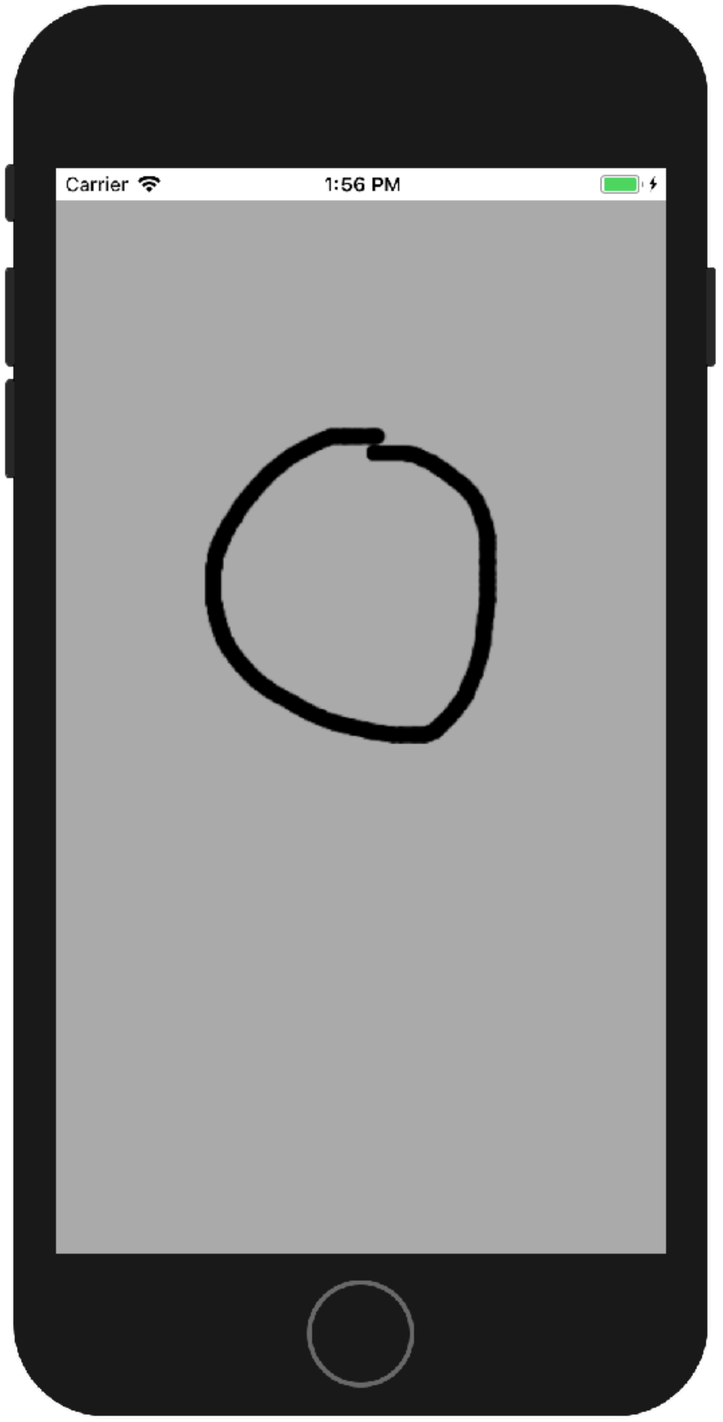
  // Copy the canvas on the imageview
  tempImageView.image = UIGraphicsGetImageFromCurrentImageContext()
  tempImageView.alpha = opacity
  UIGraphicsEndImageContext()

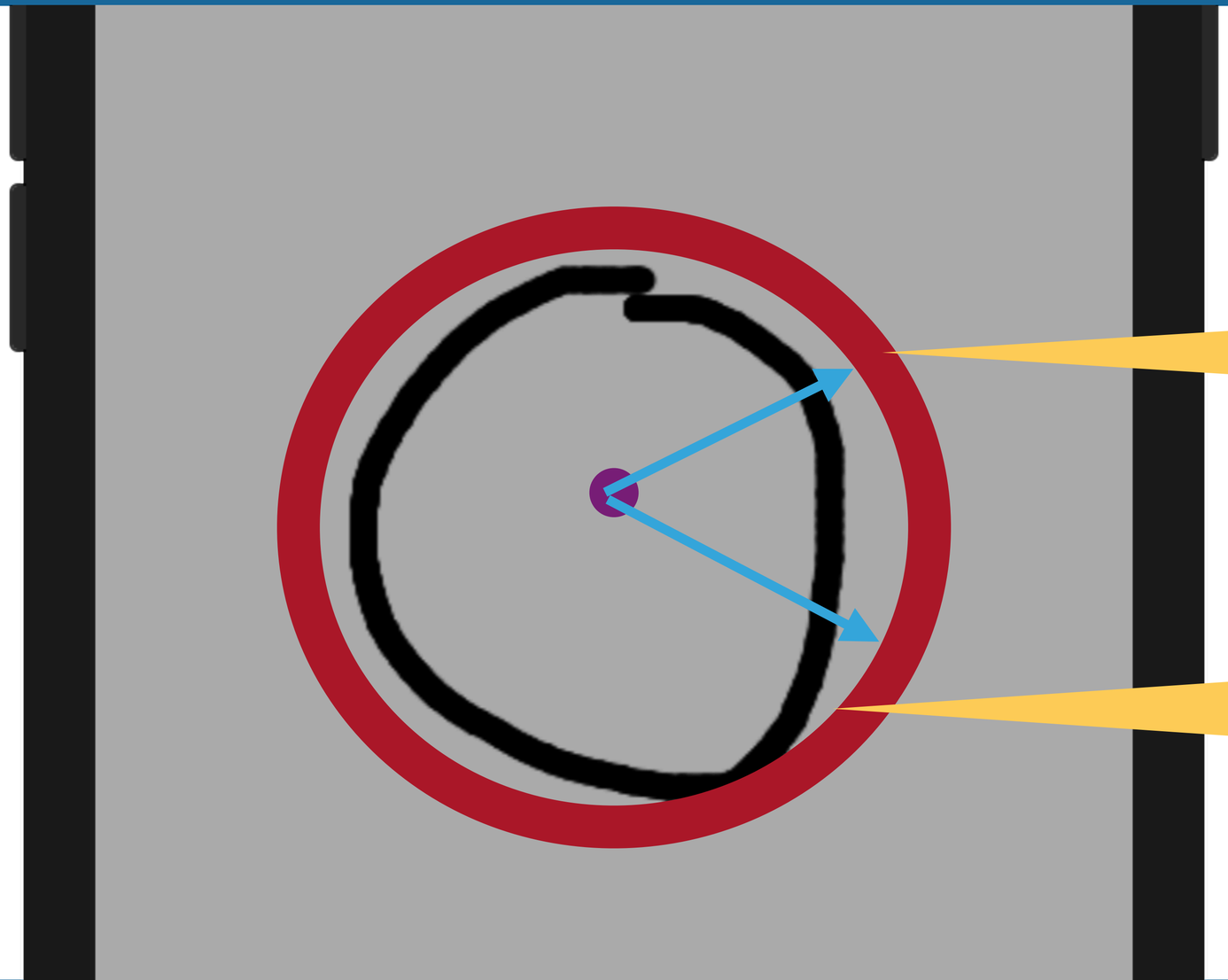
}
```

PARENTAL GATE

- This implementation is limited
  - Single stroke
  - Raw point capture
- It collects all the points for you



PARENTAL GATE



Distance from point to center will them same in a perfect circle

A hand drawn one should be close

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ADVANCED iOS APPLICATION DEVELOPMENT

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