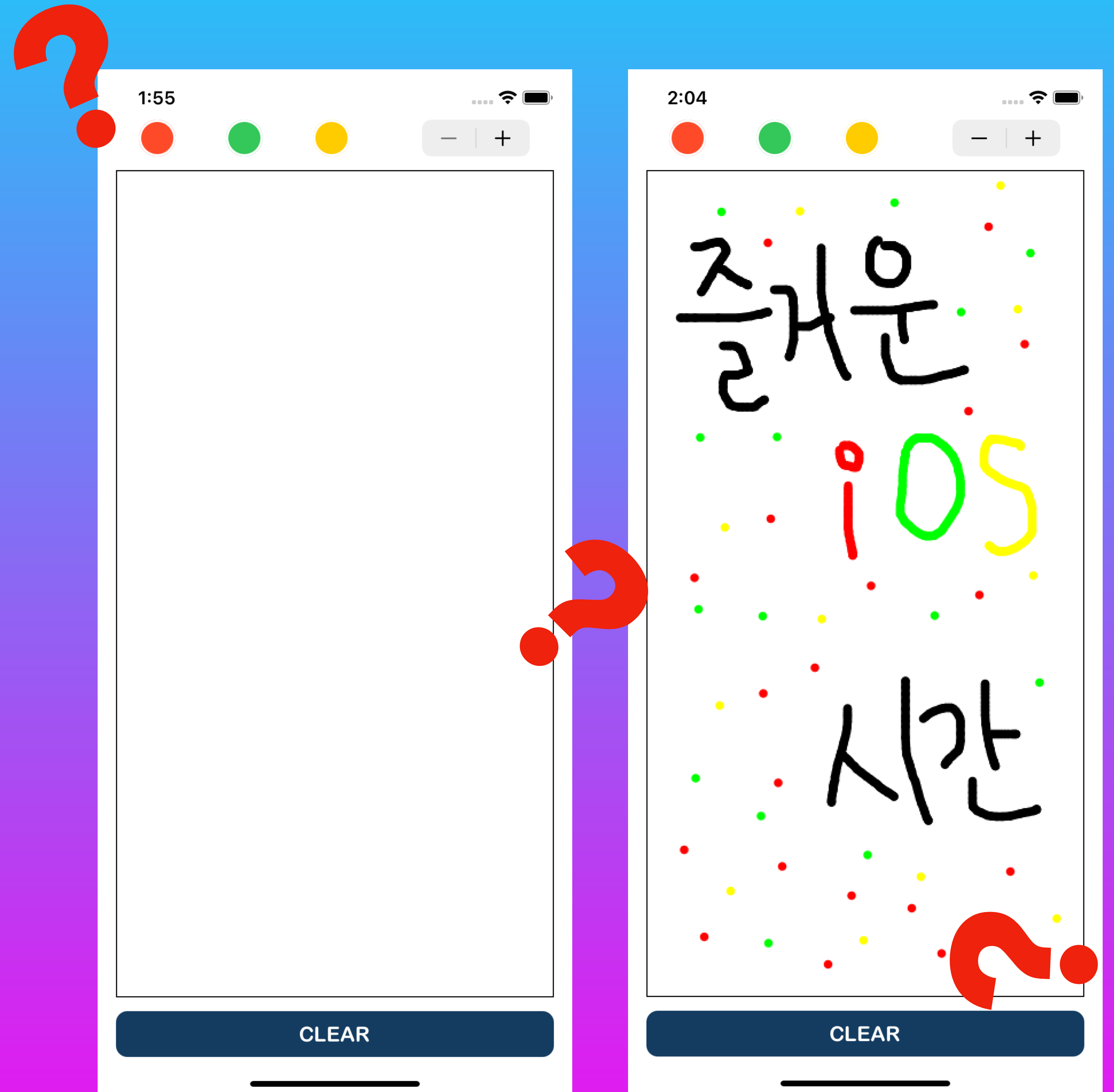


Sketch App

날 따라해봐요 이렇게

9-10교시 정창용&장서영

Sketch App



```
1  //
2  //  ViewController.swift
3  //  Sketch App
4  //
5  //  Created by 장서영 on 2021/03/14.
6  //
7
8  import UIKit
9
10 class ViewController: UIViewController {
11
12     @IBOutlet weak var redButton: UIButton!
13     @IBOutlet weak var greenButton: UIButton!
14     @IBOutlet weak var yellowButton: UIButton!
15
16     @IBOutlet weak var lineStepper: UIStepper!
17
18     @IBOutlet weak var imgView: UIImageView!
19
20     @IBOutlet weak var clearButton: UIButton!
21
22     override func viewDidLoad() {
23         super.viewDidLoad()
24         // Do any additional setup after loading the view.
25     }
26
27
28 }
29
30
```

```

1  //
2  //  ViewController.swift
3  //  Sketch App
4  //
5  //  Created by 장서영 on 2021/03/14.
6  //
7
8  import UIKit
9
10 class ViewController: UIViewController {
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12     @IBOutlet weak var redButton: UIButton!
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21
22     override func viewDidLoad() {
23         super.viewDidLoad()
24         // Do any additional setup after loading the view.
25     }
26
27
28 }
29
30

```

IBOutlet 이란?

[]

```


1  //
2  //  ViewController.swift
3  //  Sketch App
4  //
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6  //
7
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21
22     override func viewDidLoad() {
23         super.viewDidLoad()
24         // Do any additional setup after loading the view.
25     }
26
27
28 }
29
30

```

IBOutlet 이란?

[정의된 변수와 화면의 객체를 연결하는 것]

Connection ① Action

Object  View Controller

Name ② redButton

Type ③ UIButton

Event Touch Up Inside

Arguments Sender

Cancel

④ Connect

greenButton, yellowButton

동일하게 진행


```
3 // Sketch App
4 //
5 // Created by 장서영 on 2021/03/14.
6 //
7
8 import UIKit
9
10 class ViewController: UIViewController {
11
12     @IBOutlet weak var redButton: UIButton!
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14     @IBOutlet weak var yellowButton: UIButton!
15
16     @IBOutlet weak var lineStepper: UIStepper!
17
18     @IBOutlet weak var imgView: UIImageView!
19
20     @IBOutlet weak var clearButton: UIButton!
21
22     override func viewDidLoad() {
23         super.viewDidLoad()
24         // Do any additional setup after loading the view.
25     }
26
27     @IBAction func redButton(_ sender: UIButton) {
28     }
29
30     @IBAction func greenButton(_ sender: UIButton) {
31     }
32
33     @IBAction func yellowButton(_ sender: UIButton) {
34     }
35
36 |
37
38
39 }
40
```

Connection ① Action

Object  View Controller

Name ② lineStepper

Type ③ UIStepper

Event ④ Value Changed

Arguments Sender

Cancel

⑤ Connect

Connection ① Action

Object  View Controller

Name ② clearImgView

Type ③ UIButton

Event ④ Touch Up Inside

Arguments Sender

Cancel

⑤ Connect

```
3 // Sketch App
4 //
5 // Created by 장서영 on 2021/03/14.
6 //
7
8 import UIKit
9
10 class ViewController: UIViewController {
11
12     @IBOutlet weak var redButton: UIButton!
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29
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31     }
32
33     @IBAction func yellowButton(_ sender: UIButton) {
34     }
35
36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }
```

```

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8 import UIKit
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32
33     @IBAction func yellowButton(_ sender: UIButton) {
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35
36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }

```

IBAction 이란?

[]

```

3 // Sketch App
4 //
5 // Created by 장서영 on 2021/03/14.
6 //
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9
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23         super.viewDidLoad()
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28     }
29
30     @IBAction func greenButton(_ sender: UIButton) {
31     }
32
33     @IBAction func yellowButton(_ sender: UIButton) {
34     }
35
36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }

```

IBAction 이란?

[이벤트가 일어난 이후 호출되는 액션을 정의해 둔 것]


```

3 // Sketch App
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32
33     @IBAction func yellowButton(_ sender: UIButton) {
34     }
35
36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }

```

IBAction 이란?

[이벤트가 일어난 이후 호출되는 액션을 정의해 둔 것]

redButton이 눌렸을 때 실행될 함수

```

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29
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31     }
32
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35
36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }

```

IBAction 이란?

[이벤트가 일어난 이후 호출되는 액션을 정의해 둔 것]

greenButton이 눌렸을 때 실행될 함수


```

3 // Sketch App
4 //
5 // Created by 장서영 on 2021/03/14.
6 //
7
8 import UIKit
9
10 class ViewController: UIViewController {
11
12     @IBOutlet weak var redButton: UIButton!
13     @IBOutlet weak var greenButton: UIButton!
14     @IBOutlet weak var yellowButton: UIButton!
15
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24         // Do any additional setup after loading the view.
25     }
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29
30     @IBAction func greenButton(_ sender: UIButton) {
31     }
32
33     @IBAction func yellowButton(_ sender: UIButton) {
34     }
35
36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }

```

IBAction 이란?

[이벤트가 일어난 이후 호출되는 액션을 정의해 둔 것]

yellowButton이 눌렸을 때 실행될 함수

IBAction 이란?

[이벤트가 일어난 이후 호출되는 액션을 정의해 둔 것]

lineStepper가 눌렸을 때 실행될 함수

```
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4 //
5 // Created by 장서영 on 2021/03/14.
6 //
7
8 import UIKit
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36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }
```

```

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34     }
35
36     @IBAction func lineStepper(_ sender: UIStepper) {
37     }
38
39     @IBAction func clearImgView(_ sender: UIButton) {
40     }
41
42
43 }

```

IBAction 이란?

[이벤트가 일어난 이후 호출되는 액션을 정의해 둔 것]

clearImgView 이 눌렸을 때 실행될 함수

```
override func viewDidLoad() {  
    super.viewDidLoad()  
    // Do any additional setup after loading the view.  
    self.imageView.layer.borderColor = UIColor.black.cgColor  
    self.imageView.layer.borderWidth = 1  
}
```

imageView의 테두리 색을 검은색으로 지정

imageView의 테두리 두께를 1로 지정




```
override func viewDidLoad() {  
    super.viewDidLoad()  
    // Do any additional setup after loading the view.  
    self.imageView.layer.borderColor = UIColor.black.cgColor  
    self.imageView.layer.borderWidth = 1  
  
    self.lineStepper.minimumValue = 0.5  
    self.lineStepper.maximumValue = 30.0  
    self.lineStepper.stepValue = 1.0  
    self.lineStepper.layer.cornerRadius = 7  
  
    self.clearButton.layer.cornerRadius = 10  
}
```

lineStepper의 최솟값을 0.5로 설정

lineStepper의 최댓값을 30.0로 설정

lineStepper의 증감 단위 1.0으로 설정

UIStepper

A control for incrementing or decrementing a value.

Declaration

```
@interface UIStepper : UIControl
```

Overview

By default, pressing and holding a stepper's button increments or decrements the stepper's value repeatedly. The rate of change depends on how long the user continues pressing the control. To turn off this behavior, set the [autorepeat](#) property to NO.

The maximum value must be greater than or equal to the minimum value. If you set a maximum or minimum value that would break this invariant, both values are set to the new value. For example, if the minimum value is 200 and you set a maximum value of 100, then both the minimum and maximum become 200.

Important

UIStepper isn't available when the user interface idiom is [UIUserInterfaceIdiomMac](#).

UIStepper

값을 늘리거나 줄이는 컨트롤입니다.

선언

```
@interface UIStepper : UIControl
```

개요

기본적으로 스테퍼의 버튼을 길게 누르면 스테퍼의 값이 반복적으로 증가하거나 감소합니다. 변경 른은 사용자가 컨트롤을 계속 누르고있는 시간에 따라 다릅니다. 이 동작을 끄려면 `autorepeat` 속성으로 설정하십시오 NO.

최대 값은 최소값보다 크거나 같아야합니다. 이 불변을 깨는 최대 값 또는 최소값을 설정하면 두 값이 모두 새 값으로 설정됩니다. 예를 들어 최소값이 200이고 최대 값을 100으로 설정하면 최소값과 최대 값이 모두 200이됩니다.

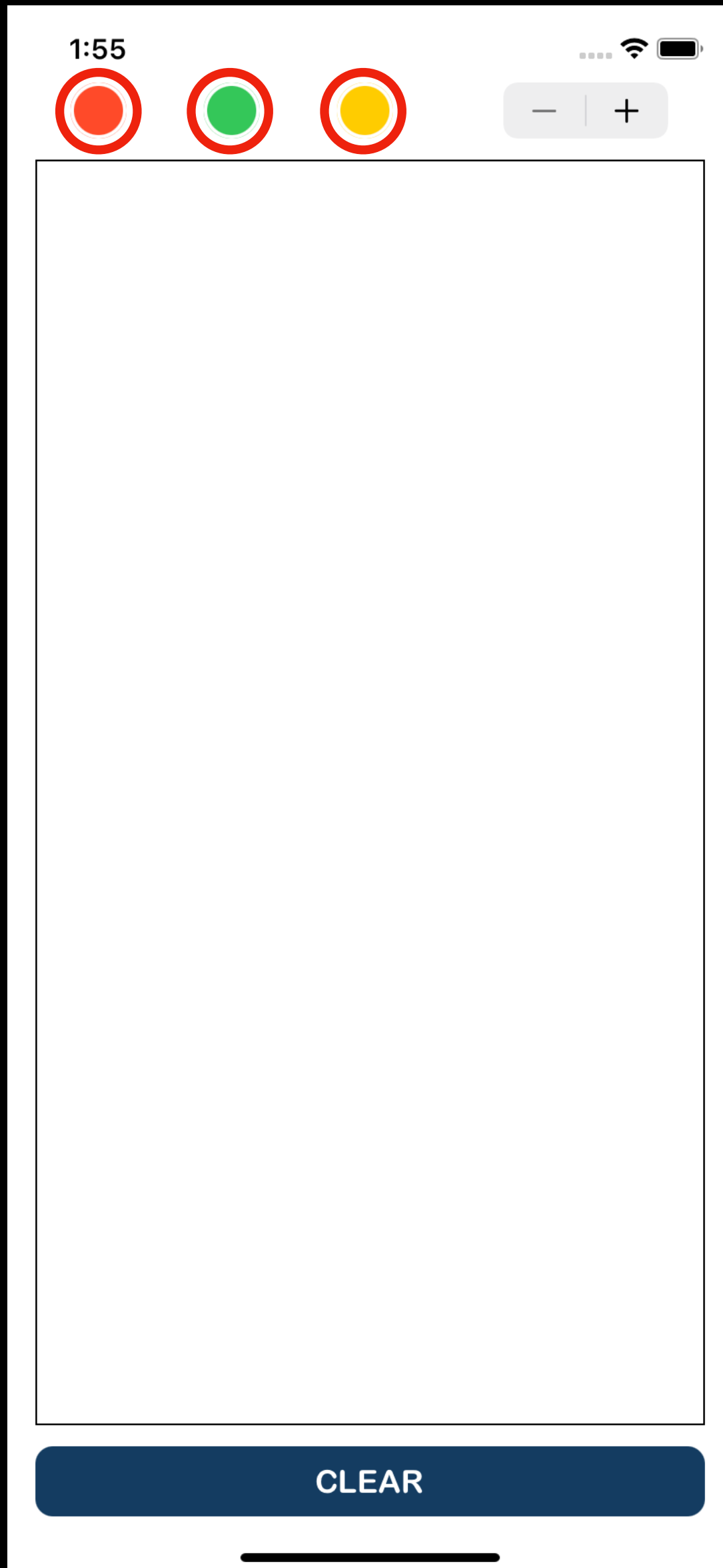
중대한

UIStepper 사용자 인터페이스 관용구가 인 경우 사용할 수 없습니다. [UIUserInterfaceIdiomMac](#)

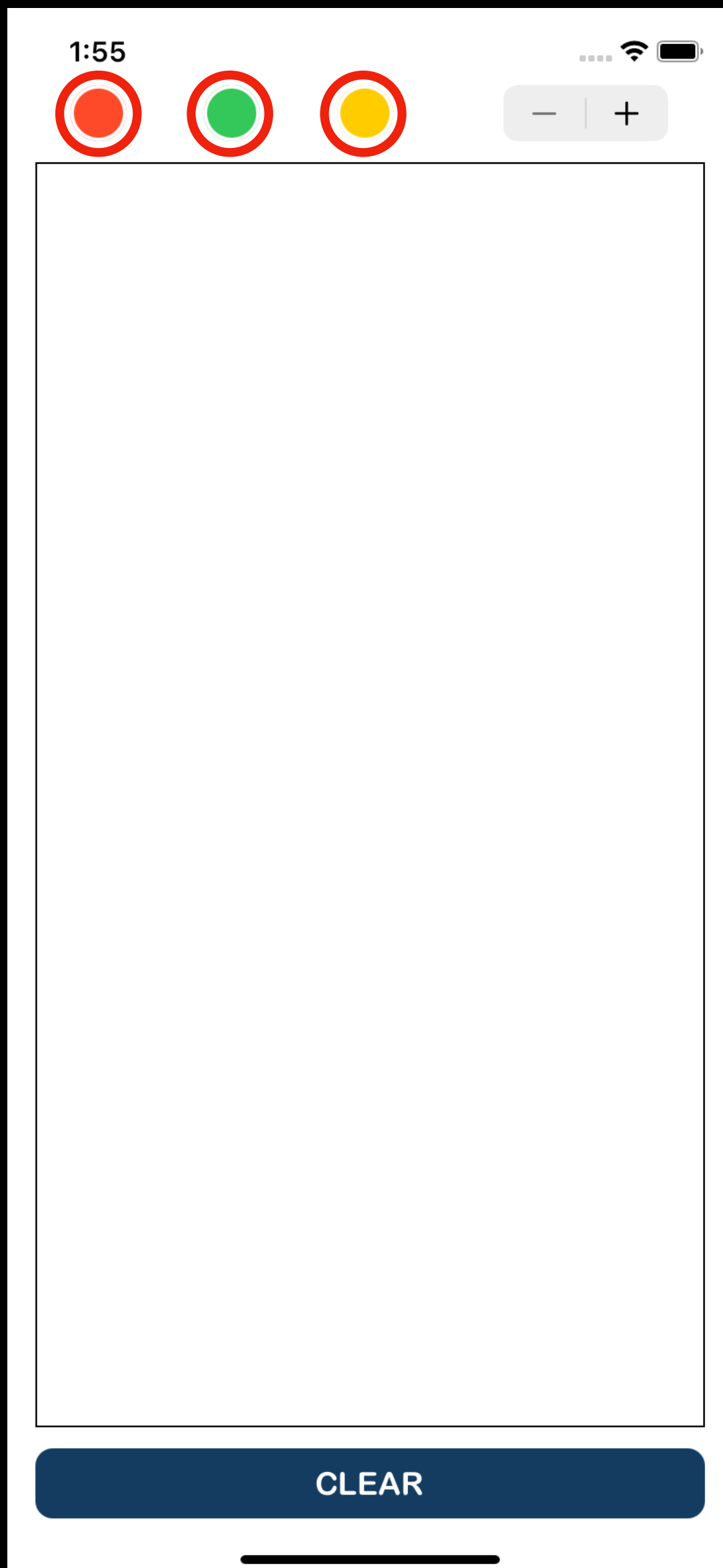
—

|

+



```
func colorButtonStyle(button: UIButton) {  
    button.layer.borderWidth = 2  
    button.layer.borderColor = UIColor.white.cgColor  
    button.layer.cornerRadius = 16  
}
```



```
override func viewDidLoad() {  
    super.viewDidLoad()  
    // Do any additional setup after loading the view.  
    self.imageView.layer.borderColor = UIColor.black.cgColor  
    self.imageView.layer.borderWidth = 1  
  
    buttonStyle(button: redButton)  
    buttonStyle(button: greenButton)  
    buttonStyle(button: yellowButton)  
  
    self.lineStepper.minimumValue = 0.5  
    self.lineStepper.maximumValue = 30.0  
    self.lineStepper.stepValue = 1.0  
    self.lineStepper.layer.cornerRadius = 7  
  
    self.clearButton.layer.cornerRadius = 10  
}
```

```
@IBAction func redButton(_ sender: UIButton) {
    if lineColor == UIColor.red { //현재 펜 색이 빨간색일 때 누르면
        lineColor = UIColor.black // 펜 색을 다시 검은색으로 바꿈.
    } else { // 현재 펜 색이 다른 색일 때
        lineColor = UIColor.red // 펜 색을 빨간색으로 바꿈.
    }
}

@IBAction func greenButton(_ sender: UIButton) {
    if lineColor == UIColor.green { // 현재 펜 색이 초록색일 때 누르면
        lineColor = UIColor.black // 펜 색을 다시 검은색으로 바꿈.

    } else { // 현재 펜 색이 다른 색일 때
        lineColor = UIColor.green // 펜 색을 초록색으로 바꿈.
    }
}

@IBAction func yellowButton(_ sender: UIButton) {
    if lineColor == UIColor.yellow { //현재 펜 색이 노란색일 때
        lineColor = UIColor.black // 펜 색을 검은색으로 바꿈.
    } else { // 현재 펜 색이 다를 때
        lineColor = UIColor.yellow // 펜 색을 노란색으로 바꿈
    }
}
```



```
@IBAction func lineStepper(_ sender: UIStepper) {  
    lineSize = CGFloat(lineStepper.value)  
}
```

lineSize(선 두께)를 lineStepper의 값으로 설정


```
@IBAction func clearImageView(_ sender: UIButton) {  
    imageView.image = nil  
}
```

imageView의 image를 nil로 설정한다

=

imageView를 초기화한다

=

다 지운다

```
override fun touchesBegan(_ touches: Set<UITouch>, with event: UIEvent?) {  
    let touch = touches.first! as UITouch // 현재 발생한 터치 이벤트를 가지고 옴  
  
    lastPoint = touch.location(in: imageView) // 터치된 위치를 lastPoint에 할당  
}
```

```
override fun touchesMoved(_ touches: Set<UITouch>, with event: UIEvent?) {
    UIGraphicsBeginImageContext(imgView.frame.size) // 그림을 그리기 위한 콘텍스트 생성
    UIGraphicsGetCurrentContext()?.setStrokeColor(lineColor.cgColor) // 선 색상 설정
    UIGraphicsGetCurrentContext()?.setLineCap(CGLineCap.round) // 선 끝 모양 라운드로 설정
    UIGraphicsGetCurrentContext()?.setLineWidth(lineSize) // 선 두께 설정

    let touch = touches.first! as UITouch // 현재 발생한 터치 이벤트를 가지고 옴
    let currPoint = touch.location(in: imgView) // 터치된 좌표를 currPoint로 가지고 옴

    imgView.image?.draw(in: CGRect(x: 0, y: 0, width: imgView.frame.size.width, height: imgView.frame.size.height)) // 현재 imgView에 있는 전체
    이미지를 imgView의 크기로 그림

    UIGraphicsGetCurrentContext()?.move(to: CGPoint(x: lastPoint.x, y: lastPoint.y)) // lastPointd위치로 시작 위치를 이동
    UIGraphicsGetCurrentContext()?.addLine(to: CGPoint(x: currPoint.x, y: currPoint.y)) // lastPoint에서 currPoint까지 선을 추가
    UIGraphicsGetCurrentContext()?.strokePath() // 추가한 선을 콘텍스트에 그림

    imgView.image = UIGraphicsGetImageFromCurrentImageContext()// 현재 터치된 위치를 lastPoint라는 변수에 할당
    UIGraphicsEndImageContext()

    lastPoint = currPoint
}
```

// 위와 동일

```
override fun touchesEnded(_ touches: Set<UITouch>, with event: UIEvent?) {  
    UIGraphicsBeginImageContext(imgView.frame.size)  
    UIGraphicsGetCurrentContext()?.setStrokeColor(lineColor.cgColor)  
    UIGraphicsGetCurrentContext()?.setLineCap(CGLineCap.round)  
    UIGraphicsGetCurrentContext()?.setLineWidth(lineSize)  
  
    imgView.image?.draw(in: CGRect(x: 0, y: 0, width: imgView.frame.size.width, height: imgView.frame.size.height))  
  
    UIGraphicsGetCurrentContext()?.move(to: CGPoint(x: lastPoint.x, y: lastPoint.y))  
    UIGraphicsGetCurrentContext()?.addLine(to: CGPoint(x: lastPoint.x, y: lastPoint.y))  
    UIGraphicsGetCurrentContext()?.strokePath()  
  
    imgView.image = UIGraphicsGetImageFromCurrentImageContext()  
    UIGraphicsEndImageContext()  
}
```



```
override fun motionEnded(_ motion: UIEvent.EventSubtype, with event: UIEvent?) {  
    if motion == .motionShake { // 폰을 흔드는 모션이 발생할 시  
        imageView.image = nil // 이미지 뷰의 이미지 삭제  
    }  
}
```

Mission
저희를 그려주세요