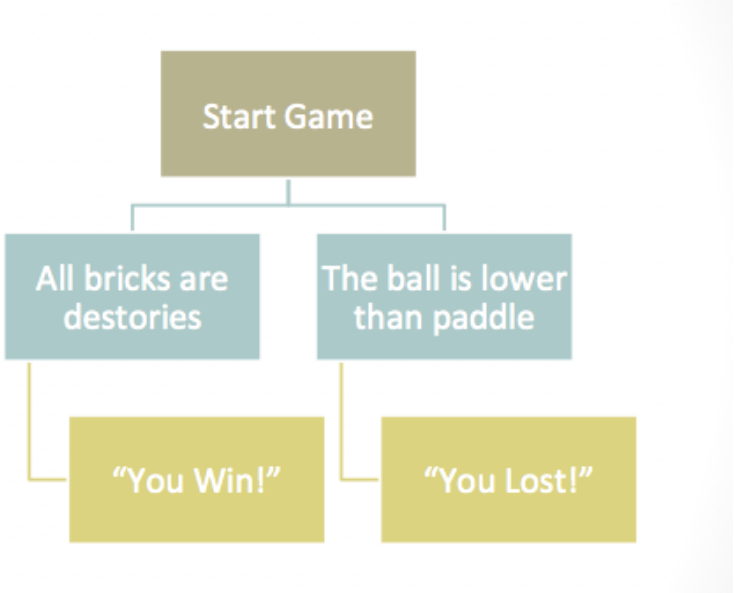
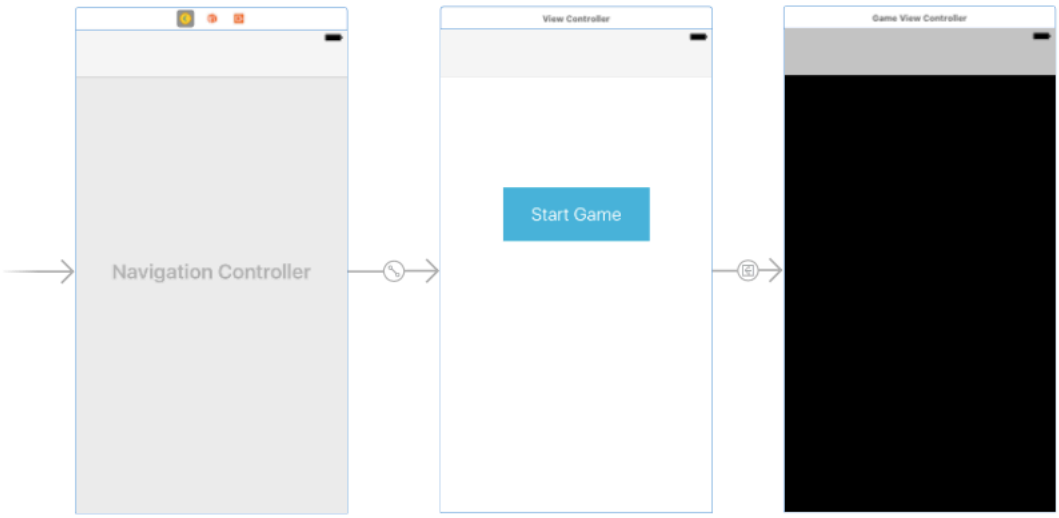
Breakout Game

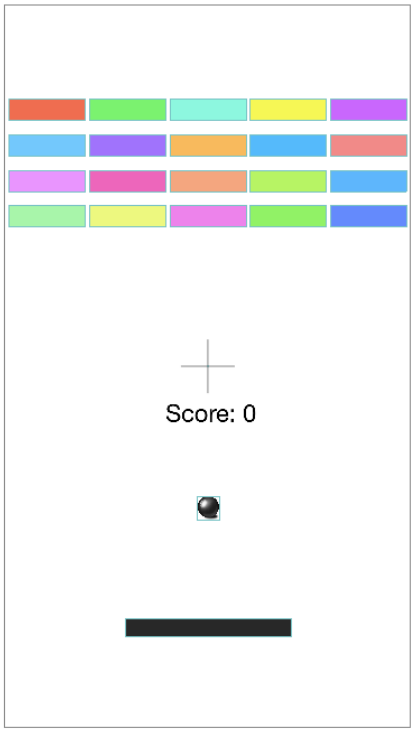
- **Structure of Breakout Game:**



- **Solution**
  1. Main.storyboard



  2. GameScene.sks



3. Details of Code

Set up the screen and set an impulse to the ball. Then add the border to screen.

```
class GameScene: SKScene, SKPhysicsContactDelegate {
    var ball:SKSpriteNode!
    var paddle:SKSpriteNode!
    var scoreLabel:SKLabelNode!
    var score:Int = 0{
        didSet{
            scoreLabel.text = "Score:\(score)"
        }
    }

//    set up screen
    override func didMove(to view: SKView){
        ball = self.childNode(withName: "Ball") as! SKSpriteNode
        paddle = self.childNode(withName: "Paddle") as! SKSpriteNode
        scoreLabel = self.childNode(withName: "Score") as! SKLabelNode

//        do an impulse of a ball and add border tp screen
        ball.physicsBody?.applyImpulse(CGVector(dx: 50,dy: 50))

        let border = SKPhysicsBody(edgeLoopFrom: (view.scene?.frame)!)
        border.friction = 0
        self.physicsBody = border

//        get access to contact within physics world
        self.physicsWorld.contactDelegate = self
    }
```

Functionality of moving the paddle and set the touch location to the location of paddle.

```
//    functionality to move the paddle
    override func touchesBegan(_ touches: Set<UITouch>, with event: UIEvent?) {
        for touch in touches{
            let touchLocation = touch.location(in: self)
            paddle.position.x = touchLocation.x
        }
    }

    override func touchesMoved(_ touches: Set<UITouch>, with event: UIEvent?) {
        for touch in touches{
            let touchLocation = touch.location(in: self)
            paddle.position.x = touchLocation.x
        }
    }
```

Update the screen and add the logic of score into it.

```
//    update the screen
    override func update(_ currentTime: TimeInterval){
        if(score == 20){
            scoreLabel.text = "You Win!"
            self.view?.isPaused = true
        }
        if (ball.position.y<paddle.position.y){
            scoreLabel.text = "You Lost!"
            self.view?.isPaused = true
        }
    }

  }
```

4. Simulator