```
// Google Blocks -> Gallery -> obj -> blender -> dae -> scn
import UIKit
import SceneKit
import ARKit
enum BodyType : Int {
    case box = 1
    case plane = 2
    case car = 4
}
class RemoteCarViewController: UIViewController, ARSCNViewDelegate {
    var sceneView: ARSCNView!
    var planes = [OverlayPlane]()
    private var carNode: SCNNode!

    override func viewDidLoad(){
        super.viewDidLoad()
        self.sceneView = ARSCNView(frame: self.view.frame)
        self.sceneView.debugOptions = [ARSCNDebugOptions.showFeaturePoints, ARSCNDebugOptions.showWorldOrigin]
        self.view.addSubview(self.sceneView)
        // self.sceneView.autoenablesDefaultLighting = true // enable auto lighting, good for well lighted environment
        sceneView.delegate = self
        //sceneView.showsStatistics = true
        let carScene = SCNScene(named: "car.dae")
        self.carNode = carScene?.rootNode.childNode(withName: "car", recursively: true)
        carNode?.physicsBody = SCNPhysicsBody(type: .dynamic, shape: nil)
        carNode.physicsBody?.categoryBitMask = BodyType.car.rawValue

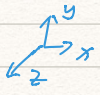
        let scene = SCNScene()
        //carNode?.position = SCNVector3(0, 0, -0.5)        // add it later after find the plane
        //scene.rootNode.addChildNode(carNode!)
        sceneView.scene = scene
        setupControlPad()
        registerGestureRecognizers()

    }

    private func registerGestureRecognizers()
        let tapGestureRecognizer = UITapGestureRecognizer(target: self, action: #selector(tapped))
        self.sceneView.addGestureRecognizer(tapGestureRecognizer)
    }

    @objc func tapped(recognizer: UIGestureRecognizer){
        let sceneView = recognizer.view as! ARSCNView
        let touchLocation = recognizer.location(in: sceneView)

        let hitTestResult = sceneView.hitTest(touchLocation, types: .existingPlaneUsingExtent)
        if !hitTestResult.isEmpty {
            guard let hitResult = hitTestResult.first else {
                return
            }
```



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            self.carNode.position = SCNVector3(hitResult.worldTransform.columns.3.x,
                                               hitResult.worldTransform.columns.3.y + 0.1
                                               hitResult.worldTransform.columns.3.z)
            self.sceneView.scene.rootNode.addChildNode(self.carNode)

        }
    }


    private func turnLeft(){
        self.carNode.physicsBody?.applyTorque(SCNVector4(0, 1, 0, 1.0), asImpulse: false)
    }

    private func turnRight(){
        self.carNode.physicsBody?.applyTorque(SCNVector4(0, 1, 0, -1.0), asImpulse: false)
    }
    private func accelerate(){
        let force = simd_make_float4(0,0,-10,0)          //depend on the node's direction in the scene
        let rotatedForce = simd_mul(self.carNode.presentation.simdTransform, force)
        let vectorForce = SCNVector3(rotatedForce.x, rotatedForce.y, rotatedForce.z)
        self.carNode.physicsBody?.applyForce(vectorForce, asImpulse: false)
    }


    private func setupControlPad(){
        let leftButton = GameButton(frame: CGRect(x:0, y: self.sceneView.frame.height - 40, width: 50, height: 50)){
            turn(left())
        }
        leftButton.setTitle("left", for: .normal)
        let rightButton = GameButton(frame: CGRect(x:60, y: self.sceneView.frame.height - 40, width: 50, height: 50)){
            turnRight()
        }
        leftButton.setTitle("right", for: .normal)
        let acceleratorButton = UIButton(frame: CGRect(x:120 y: self.sceneView.frame.height - 40, width: 60, height: 20)){
            self.accelerate()
        }
        acceleratorButton.backgroundColor = UIColor.red
        acceleratorButton.layer.cornerRadius = 10.0
        acceleratorButton.layer.masksToBounds = true

        self.sceneView.addSubview(leftButton)
        self.sceneView.addSubview(rightButton)
        self.sceneView.addSubview(acceleratorButton)
    }
```

```
//GameButton.swift
import Foundation
import UIKit

class GameButton : UIButton{
    var callback: ()->()
    private var timer: Timer!

    init (frame: CGRect, callback : @escaping ()->()){
        self.callback = callback
        super.init(frame: frame)
    }

    override func touchesBegan(_ touches: Set<UITouch>, with event: UIEvent?){
        self.timer= Timer.scheduledTimer( withTimeInterval: 0.01, repeats: true,
                block :{ [weak self] (timer:Timer) in
                self?.callback()
                })
    }

    override func touchesEnded(_ touches: Set<UITouch>, with event : UIEvent?){
        self.timer.invalidate()
    }

    required init?(coder aDecoder:NSCoder){
        fatalError("init(coder:) has not been implemented")
    }
}
```