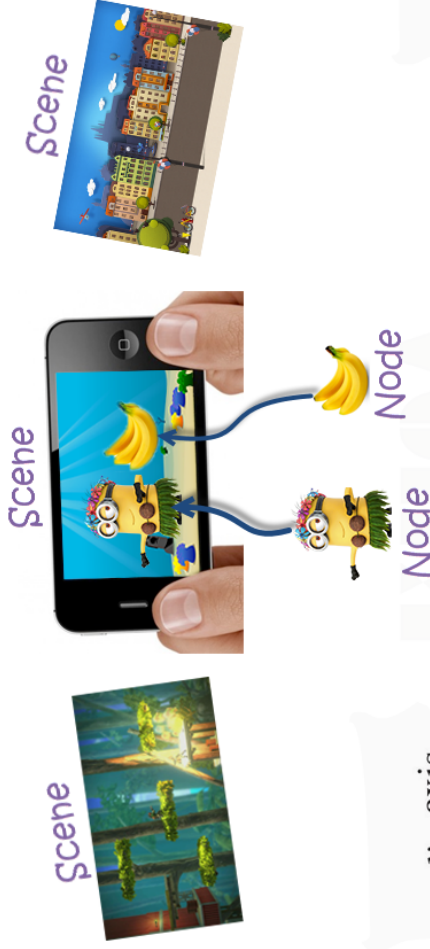
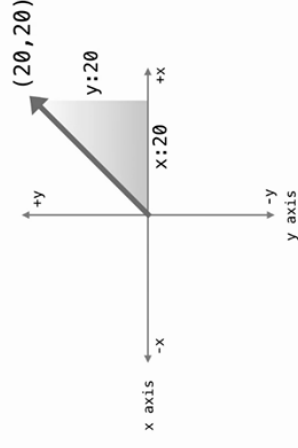


KHOA HỌC LẬP TRÌNH IOS NÂNG CAO

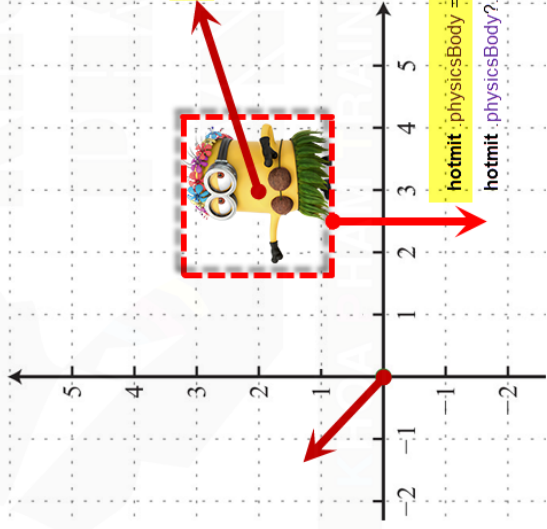
BÀI 23: LẬP TRÌNH GAME VỚI SPRITE KIT



What is a vector?



y - axis



```
var aoTexture:SKTexture = SKTexture(imageNamed: "hinh.png")
var hotmit = SKSpriteNode(texture:aoTexture)
hotmit.position = CGPoint(x:3, y:2)
self.addChild(hotmit)
```

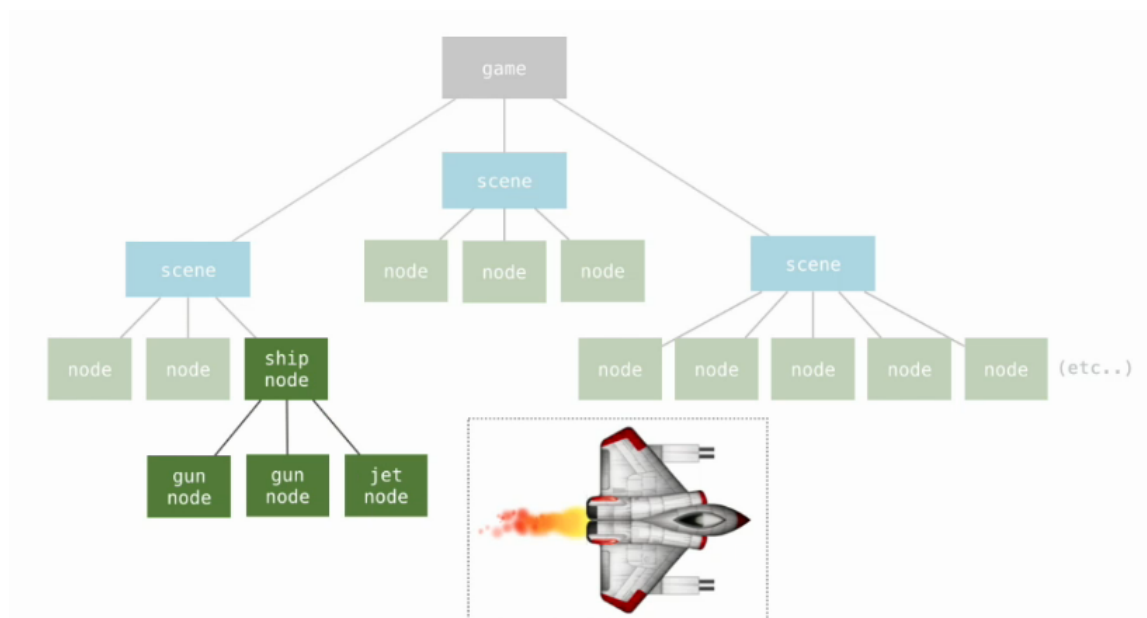
6 – SKAction tạo diễn hoạt lặp

```
var chimTexture1:SKTexture = SKTexture(imageNamed: "flappy1.png")
var chimTexture2:SKTexture = SKTexture(imageNamed: "flappy2.png")
var chimbay:SKAction = SKAction.animateWithTextures([chimTexture1,
chimTexture2], timePerFrame: 0.1)
var baylientuc:SKAction = SKAction.repeatActionForever(chimbay)

chim = SKSpriteNode(texture: chimTexture1)
chim.position = CGPoint(x: CGRectGetMidX(self.frame), y:
CGRectGetMidY(self.frame))
chim.runAction(baylientuc)
```



LẬP TRÌNH GAME SPRITE KIT VỚI SWIFT

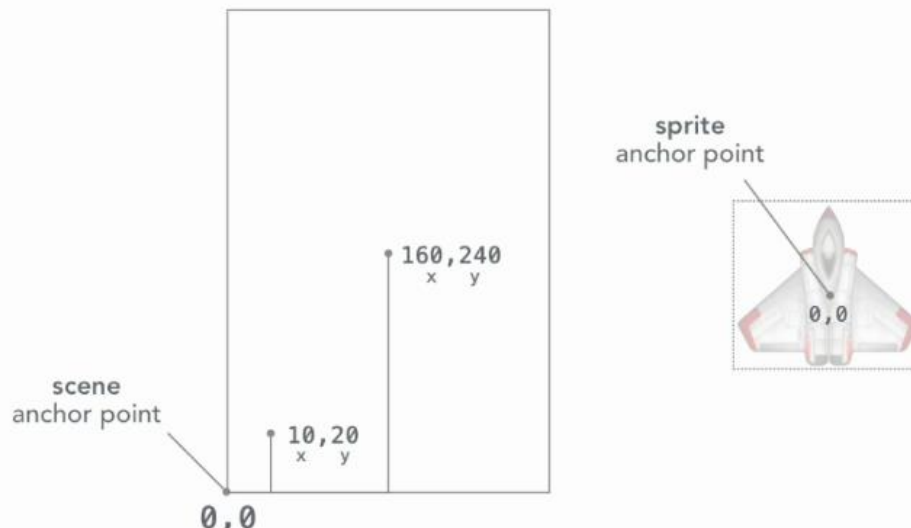


1 – Tạo Node:

```
var boTexture:SKTexture = SKTexture(imageNamed: "logoKhoaPham.png")
boSpriteNode = SKSpriteNode(texture:boTexture)

boSpriteNode.position = CGPoint(x:0 , y:0)
self.addChild(boSpriteNode)
```

Anchor Points



2 – Lấy kích thước màn hình:

`CGRectGetHeight(self.frame)` : Chiều ngang

`CGRectGetWidth(self.frame)` : Chiều dọc

`CGRectGetMidX(self.frame)` : Nửa chiều ngang màn hình

`CGRectGetMidY(self.frame)` : Nửa chiều dọc màn hình

3 – Lực hút trái đất

```
boSpriteNode.physicsBody = SKPhysicsBody(circleOfRadius: boSpriteNode.size.width/2) // Khung tròn
```

```
boSpriteNode.physicsBody?.dynamic = true (false)
```

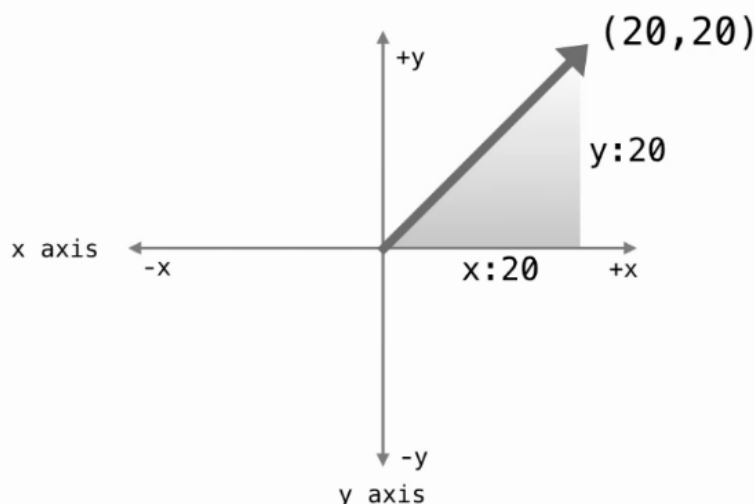
4 – SKAction: Xoay tròn

```
var xoay:SKAction = SKAction.rotateByAngle(0.1, duration: 5)
```

```
ground.runAction(xoay)
```

5 – Vector: Xác định hướng

What is a vector?



```
chim.physicsBody?.velocity = CGVectorMake(0, 0)
chim.physicsBody?.applyImpulse(CGVectorMake(0, 60))
```

6 – SKAction tạo diễn hoạt lặp

```
var chimTexture1:SKTexture = SKTexture(imageNamed: "flappy1.png")
var chimTexture2:SKTexture = SKTexture(imageNamed: "flappy2.png")
var chimbay:SKAction = SKAction.animateWithTextures([chimTexture1, chimTexture2], timePerFrame: 0.1)
var baylientuc:SKAction = SKAction.repeatActionForever(chimbay)

chim = SKSpriteNode(texture: chimTexture1)
chim.position = CGPoint(x: CGRectGetMidX(self.frame), y: CGRectGetMidY(self.frame))
chim.runAction(baylientuc)
```



TỔNG HỢP SPRITE KIT VỚI SWIFT

1- Co dẫn màn hình game:

```
self.scaleMode = SKSceneScaleMode.Fill  
view.showsPhysics = false
```

2 – Tạo nhân vật game

```
var texture1 = SKTexture(imageNamed: "Idle (1).png")  
sieunhan = SKSpriteNode(texture: texture1)  
sieunhan.size.width = sieunhan.size.width / 3  
sieunhan.size.height = sieunhan.size.height / 3  
sieunhan.position = CGPoint(x: bitexco.size.width + sieunhan.size.width/2, y: sieunhan.size.height/2 )  
  
sieunhan.physicsBody = SKPhysicsBody(rectangleOfSize: sieunhan.size)  
sieunhan.physicsBody?.dynamic = true  
  
self.addChild(sieunhan)
```

3 – Hàm lấy số tự động

```
Int(arc4random_uniform(300))
```

4 – Tạo diễn hoạt cho nhân vật

```
func Sieunhan_idle(){  
    var texture1 = SKTexture(imageNamed: "Idle (1).png")  
    var texture2 = SKTexture(imageNamed: "Idle (2).png")  
    var texture3 = SKTexture(imageNamed: "Idle (3).png")  
    var texture4 = SKTexture(imageNamed: "Idle (4).png")  
  
    var sieunhanTho:SKAction = SKAction.animateWithTextures([texture1, texture2, texture3, texture4],  
timePerFrame: 0.1)  
    var sieunhanThoLienTuc:SKAction = SKAction.repeatActionForever(sieunhanTho)  
    sieunhan.runAction(sieunhanThoLienTuc)  
}
```

5 – Play file âm thanh (Sound)

```
var bansung = SKAction.playSoundFileNamed("bansung.mp3", waitForCompletion: false)  
self.runAction(bansung)
```

6 – Chuyển màn hình

```
let welcomeScene = WelcomeScene(size:self.size)  
welcomeScene.scaleMode = scaleMode  
let reveal = SKTransition.fadeWithDuration(3)  
self.view?.presentScene(welcomeScene, transition: reveal)
```

7 – Hiệu ứng môi trường trong game

```
var path = NSBundle.mainBundle().pathForResource("MuaHoai", ofType: "sks")  
mua = NSKeyedUnarchiver.unarchiveObjectWithFile(path!) as! SKEmitterNode  
mua.position = CGPoint(x: self.frame.size.width/2, y: self.frame.size.height)  
self.addChild(mua)
```



8 – Xoay tròn vật thể

```
vongtron.speed = 1.0 // no need
var xoay:SKAction = SKAction.rotateByAngle(30, duration: 10)
var chamdan = SKAction.speedTo(0, duration: 10)
var tralai = SKAction.speedTo(1.0, duration: 10)

vongtron.runAction(xoay)
vongtron.runAction(chamdan)
```

9 – Xử lý va chạm trong game

B1: Gọi thư viện **SKPhysicsContactDelegate**

```
physicsWorld.contactDelegate = self
```

B2: Tạo các nhóm trong game:

```
enum vatThe:UInt32{
    case usa = 1
    case jap = 2
}
```

B3: Xếp các node vào nhóm (Phải có rectangle & dynamic true)

```
captain.physicsBody?.contactTestBitMask = vatThe.usa.rawValue
songoku.physicsBody?.contactTestBitMask = vatThe.jap.rawValue
```

B4: Add hàm xử lý va chạm:

```
func didBeginContact(contact: SKPhysicsContact) {
    let contactMask = contact.bodyA.contactTestBitMask | contact.bodyB.contactTestBitMask
    switch(contactMask){
        ...
        default:
            return
    }
}
```