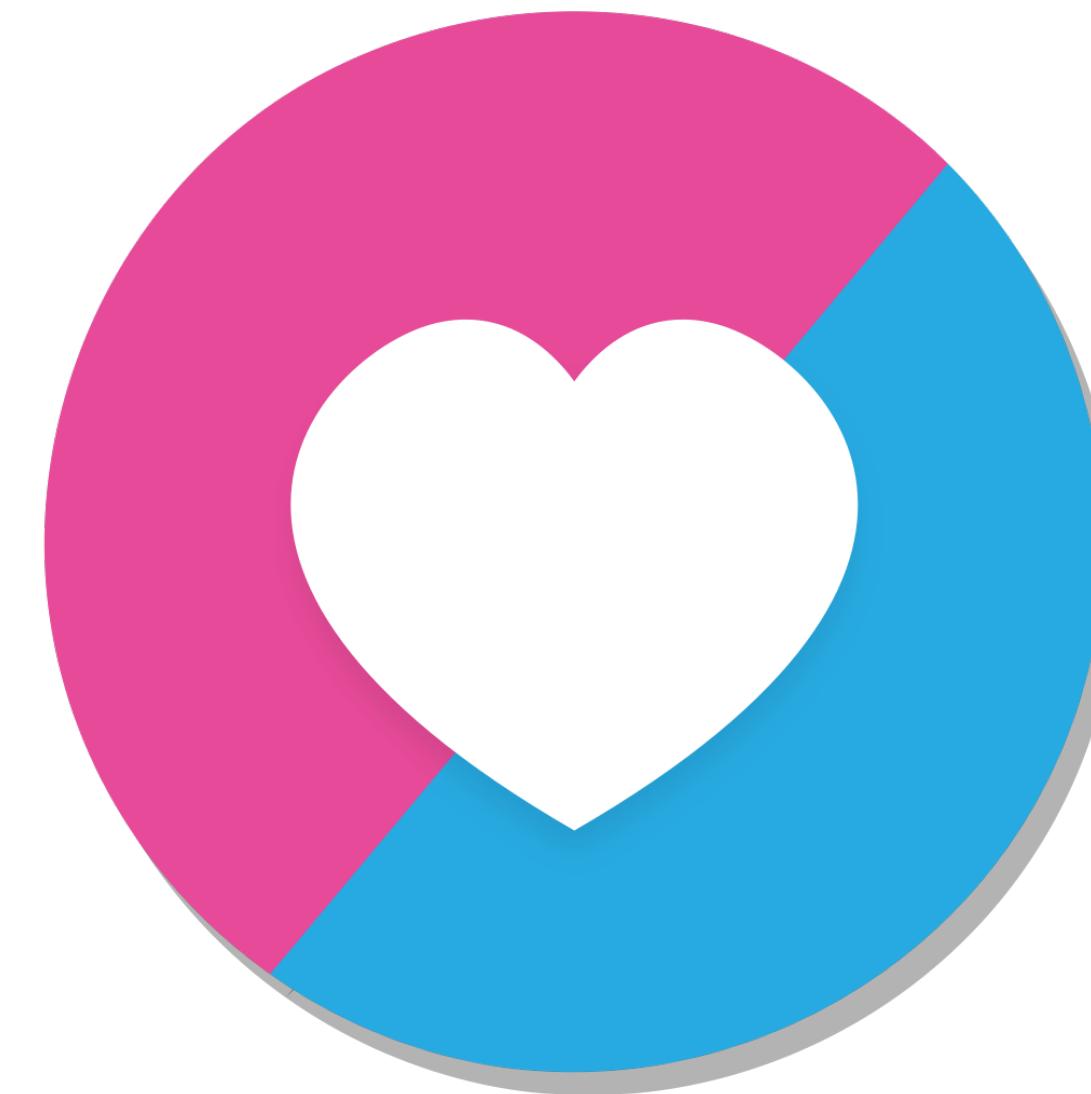


INF1805



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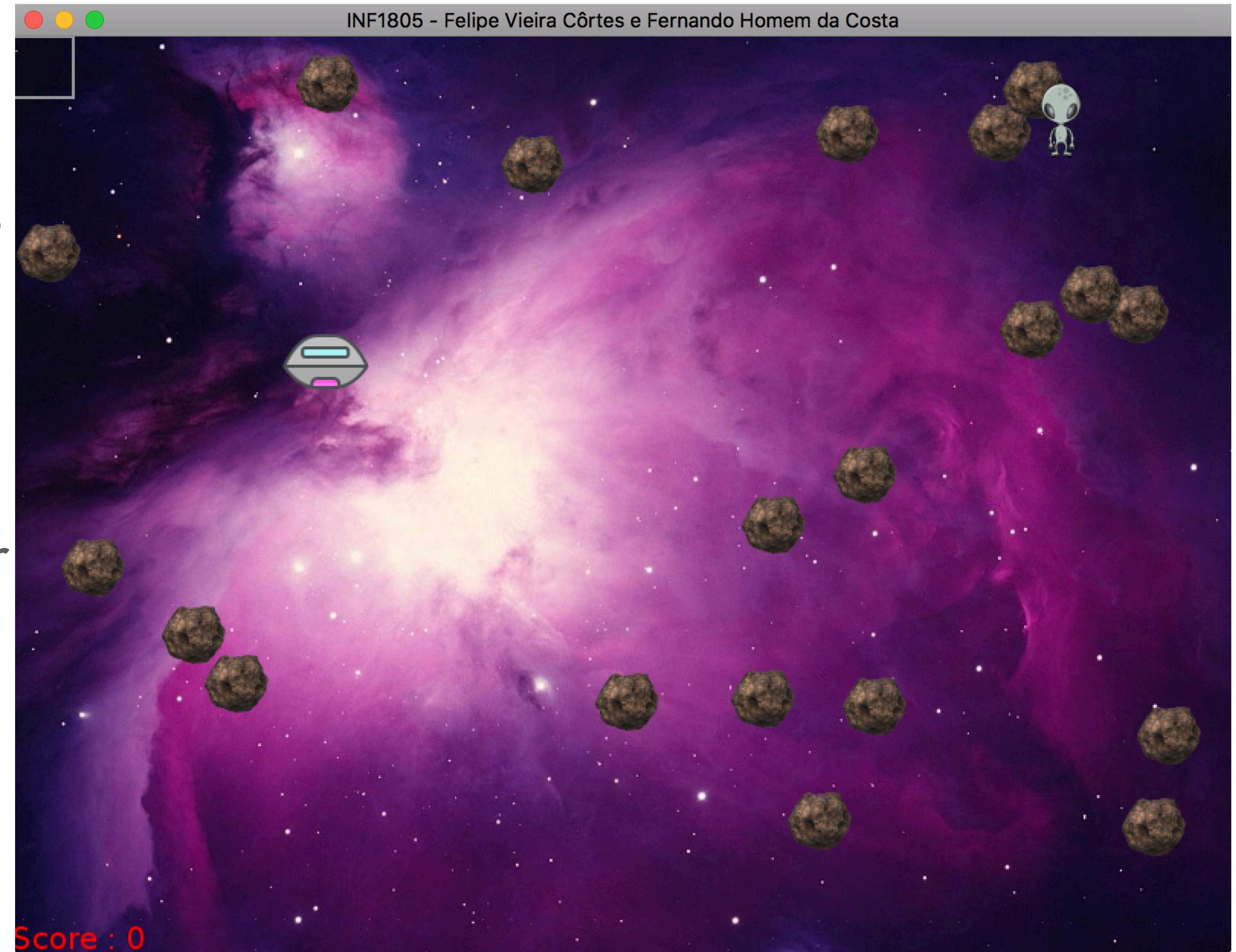
www.github.com/nandohdc/inf1805

OBJETIVO

- Desenvolver um jogo utilizando LOVE e a linguagem Lua.
- Criar funções auxiliares em Lua para descrever o comportamento dos personagens.
- Utilizando conceitos aprendidos em aula:
 - Encapsulamento de funções.
 - Co-rotinas

JOGO

- O jogo é composto por uma nave espacial, asteroides e um alien.
- Nave é capaz de atirar e destruir os asteroides para chegar até o alien.
- Quanto mais aliens forem recolhidos maior será sua pontuação.
- Ao ser atingido por um asteroide ou tentar sair do seu limite de tela, sua nave voltará para origem e sua pontuação será zerada.



CÓDIGO

```
function love.load()
    love.window.setTitle("INF1805 - Felipe Vieira Côrtes e Fernando Homem da Costa")
    love.window.setMode(800, 600, {resizable=true, vsync=false, minwidth=400, minheight=300})
    img = {}
    img.background = love.graphics.newImage('/images/background.jpg') -- dimensions 800 x 600
    img.spaceship = love.graphics.newImage('/images/ufo.png') -- dimensions 64 x 64
    img.asteroid = love.graphics.newImage('/images/asteroid.png') -- dimensions 64 x 64
    img.objective = love.graphics.newImage('/images/rebels.png') -- dimensions 64 x 64

    track = {}
    track.soundtrack = love.audio.newSource("/Assets/1-10 The Empire Strikes Back_ The Imperial March .mp3")
    track.explosion = love.audio.newSource("/Assets/Explosion.mp3")
    track.lasers = {}
    track.soundtrack:play()
    score = 0
    W, H=lg.getWidth(), lg.getHeight()
    Obstacles={}
    for i=1,20 do
        Obstacles[i] = newObs(i*50/50000)
    end
    Player = newPlayer(5/1000)
    Objective = newObjective()
    listaShot = {}
end

function love.draw()
    love.graphics.draw(img.background, 0, 0)
    lg.setColor(255,255,255,255)
    lg.rectangle('line', 0,0,40,40)
    for i = 1,#Obstacles do
        Obstacles[i].draw()
    end
    Player.draw()

    lg.setColor(255,0,0,255)
    font = love.graphics.newFont(20)
    font = love.graphics.setFont(font)
    lg.print("Score : "..score,0,HH - 20)
    lg.setColor(255,255,255,255)
    if collision then
        lg.setColor(255,255,255,255)
        score = 0
    end
    Objective.draw()
    for i=1,#listaShot do
        listaShot[i].draw()
    end
end
```

CÓDIGO

```
function newObs (vel)
    local _x,_y = math.random(0,WW),math.random(0,HH)
    local direction = "left"
    if math.random(0,1) > 0 then
        direction = "left"
    else
        direction = "right"
    end
    return {
        update = coroutine.wrap(function (self)
            while true do
                local width, height = love.graphics.getDimensions()
                local oldX, oldY = _x,_y
                if direction == "left" then
                    _x = _x+1
                else
                    _x = _x-1
                end
                if _x > width then
                    direction = "right"
                    _x,_y = oldX,oldY
                end
                if _x < 0 then
                    direction = "left"
                    _x,_y = oldX,oldY
                end
                if _x <= 80 and _y <= 80 then
                    direction = "left"
                    _x,_y = oldX,oldY
                end
                self.x = _x
                wait(vel,self)
            end
        end),
        draw = function ()
            love.graphics.draw(img.asteroid, _x - 16, _y - 16)
        end,
        x = _x,
        y = _y,
        w = 40,
        h = 40,
        decorr = 0,
        hit = 0
    }
end
```

CÓDIGO

```
function newPlayer (vel)
    local _x, _y = 1, 1
    local oldZ, newZ = 0,0
    return {
        update = coroutine.wrap(function (self)
            while true do
                local width, height = love.graphics.getDimensions( )
                local direction = "up"
                local isDown=love.keyboard.isDown
                if isDown('right') or isDown('d') then
                    _x = _x+1
                    direction = "right"
                elseif isDown('left') or isDown('a') then
                    _x = _x-1
                    direction = "left"
                elseif isDown('up') or isDown('w') then
                    _y = _y-1
                    direction = "up"
                elseif isDown('down') or isDown('s') then
                    _y = _y+1
                    direction = "down"
                end
                if isDown('z') and (direction ~= "up" and direction ~= "down") then
                    newZ = 1
                    if(oldZ == 0 and newZ == 1) then
                        oldZ = newZ
                        table.insert(listaShot,newShot(1/500, direction))
                        local newSource = love.audio.newSource("/Assets/LaserGun.mp3")
                        table.insert(track.lasers,newSource)
                        newSource:setVolume(0.1)
                        newSource:play()
                    end
                    if(oldZ == 1 and newZ == 0) then
                        oldZ = newZ
                    end
                else
                    newZ = 0
                    oldZ = newZ
                end
                self.x = _x
                self.y = _y

                collision = false
                if not isOnScreen(self) or isColliding(self) then
                    _x, _y=1,1
                    collision=true
                    track.explosion:setVolume(0.6)
                    track.explosion:play()
                end
                self.x = _x
                self.y = _y
                wait(vel,self)
            end
        end),
        draw = function ()
            love.graphics.draw(img.spaceship, _x-16, _y-16)
        end,
```

CÓDIGO

```
function newObjective (vel)
    local _x,_y = math.random(0,WW),math.random(0,HH)
    local direction = "up"
    local floatingY = _y
    if math.random(0,1) > 0 then
        direction = "up"
    else
        direction = "down"
    end
    return {
        update = coroutine.wrap(function (self)
            while true do
                local width, height = love.graphics.getDimensions( )
                local oldX, oldY = _x,_y
                if direction == "up" then
                    _y = _y+1
                else
                    _y = _y-1
                end
                if _y >= floatingY + 25 then
                    direction = "down"
                    _y = oldY
                elseif _y <= floatingY then
                    direction = "up"
                    _y=oldY
                end
                self.y = _y
                wait(vel,self)
            end
        end),
        draw = function ()
            love.graphics.draw(img.objective, _x, _y)
            -- lg.rectangle('line',_x,_y,40,64)
        end,
        x = _x,
        y = _y,
        w = 32,
        h = 51,
        decorr = 0
    }
end
```

CÓDIGO

```
function newShot (vel,dir)
local _x,_y,w,h = Player.x, Player.y+8,20,5
local direction = dir
return {
    update = coroutine.wrap(function (self)
        while true do
            if direction == "right" then
                _x = _x+1
            elseif direction == "left" then
                _x = _x-1
            elseif direction == "up" then
                _y = _y-1
            elseif direction == "down" then
                _y = _y+1
            elseif true then
                _x = _x+1
            end
            self.x,self.y = _x,_y
            if shotHit(self) or not isOnScreen(self) then
                self.hit = 1
            end
            wait(vel,self)
        end
    ),
    draw = function ()
        lg.setColor(255,0,0,255)
        lg.rectangle('fill',_x,_y,w,h)
        lg.setColor(255,255,255,255)
    end,
    x = _x,
    y = _y,
    w = 20,
    h = 5,
    hit = 0,
    decorr = 0
}
end
```

DIFICULDADES ENCONTRADAS

- Lidar com a interação entre os objetos.
- Criar funções auxiliares para que verificassem a colisão entre os objetos.
- Sincronizar os efeitos sonoros com as ações dos personagens.

Perguntas?



Obrigado!