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Programación orientada a objetos	Carlos Iván Castillo Sepúlveda
Módulo	Actividad:
Módulo 1	Descripción de las clases
Bibliografía	Date
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CORE

Game <<libGDX>>

Métodos

```
setScreen(Screen)  
create()  
render()  
dispose()
```

Screen <<interface>>

Métodos

```
show()  
render(float delta)  
resize(int width, int height)  
pause()  
resume()  
hide()  
dispose()
```

MAIN

MainGame

Atributos

```
RenderSystem renderSystem
```

Métodos

```
create()  
startGame()  
dispose()
```

MenuScreen

Atributos

```
MainGame game  
SpriteBatch batch
```

Texture background

Texture[] buttons

Métodos

show()

render(float delta)

dispose()

GameScreen

Atributos

MainGame game

GameManagers managers

GameRenderers renderers

boolean gameActive

boolean victory

boolean defeat

int selectedPlant

Cooldowns cooldowns

ArrayList<Plant> plants

ArrayList<Enemy> enemies

ArrayList<Projectile> projectiles

ArrayList<SoapWave> soapWaves

ArrayList<SoapDefense> soapDefenses

Métodos

show()

render(float delta)

advanceToNextLevel()

restartAfterGameOver()

getPlants() : ArrayList<Plant>

getEnemies() : ArrayList<Enemy>

SYSTEMS

RenderSystem

Atributos

SpriteBatch batch
ShapeRenderer shapeRenderer
OrthographicCamera camera
Viewport viewport
BitmapFont font
GlyphLayout layout

Métodos

updateCamera()
resize(int width, int height)
dispose()

GameManagers

Atributos

WaveManager waveManager
SlimeSpawner spawner
WaterManager waterManager
PlantPlacer plantPlacer
GameUpdater gameUpdater

Métodos

update(float delta)

GameRenderers

Atributos

CardRenderer cardRenderer
HealthBarRenderer healthBarRenderer
WaterBarRenderer waterBarRenderer
GameOverRenderer gameOverRenderer

GameRenderer gameRenderer

Métodos

renderGame()

renderGameOver(boolean victory)

handleGameOverInput(GameScreen screen)

GAME LOGIC

GameUpdater

Atributos

GameScreen gameScreen

Viewport viewport

Métodos

update(float delta)

PlantPlacer

Atributos

GameScreen gameScreen

Métodos

handleInput()

MANAGERS

WaterManager

Atributos

float currentWater

float maxWater

Métodos

getCurrentWater()

canAfford(int cost)

spendWater(int amount)

addWater(float amount)

update(float delta, ArrayList<Plant> plants)

WaveManager

Atributos

ArrayList<Wave> waves

int currentWaveIndex

Wave currentWave

Métodos

update(float delta, ArrayList<Enemy> enemies)

isLevelComplete(ArrayList<Enemy> enemies) : boolean

getCurrentWave(): int

getTotalWaves(): int

SlimeSpawner

Atributos

WaveManager waveManager

Métodos

update(float delta, ArrayList<Enemy> enemies)

isLevelComplete(ArrayList<Enemy> enemies): boolean

Wave

Atributos

ArrayList<SpawnInfo> spawns

float timer

boolean complete

Métodos

update(float delta, ArrayList<Enemy> enemies)

isComplete(): boolean

LevelFactory <>static>

Métodos

getLevel(int level) : ArrayList<Wave>

ENTITIES

Plant <>abstract>

Atributos

```
float x  
float y  
float resistanceTimer  
float maxResistanceTime  
boolean dead  
int cost  
Animation animation
```

Métodos

```
update(float delta)  
draw(SpriteBatch batch)  
act(float delta, ArrayList<Projectile>, List<Enemy>)  
isDead() : boolean  
getCost() : int  
getCooldownTime() : float
```

Enemy <>abstract>

Atributos

```
float x  
float y  
int health  
int maxHealth  
float speed  
Animation animation  
boolean eating
```

Métodos

```
update(float delta)  
draw(SpriteBatch batch)
```

takeDamage(int damage)
isDead() : boolean
setEating(boolean eating)
getHealth() : int

Projectile

Atributos

float x
float y
int damage
float speed

Métodos

update(float delta)
draw(SpriteBatch batch)
isOffScreen() : boolean
getDamage() : int

TIPOS DE PLANTAS

CornShooter (Hereda de Plant)

Atributos

float shootTimer
float SHOOT_INTERVAL
int DAMAGE

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)
shoot(ArrayList<Projectile>, List<Enemy>)

Papa (Hereda de Plant)

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)

WaterPlant (Hereda de Plant)

Atributos

float waterTimer

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)

Champi (Hereda de Plant)

Atributos

State currentState

float stateTimer

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)

RedBom (Hereda de Plant)

Atributos

float fuseTime

ArrayList<Enemy> enemies

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)

LilyPad (Hereda de Plant)

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)

Maceta (Hereda de Plant)

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)

Campanilla (Hereda de Plant)

Atributos

float shootTimer

Métodos

act(float delta, ArrayList<Projectile>, List<Enemy>)

TIPOS DE ENEMIGOS

NormalSlime (Hereda de Enemy)

Métodos

loadAnimation()

SlimeTanque (Hereda de Enemy)

Métodos

loadAnimation()

SlimeDivisor (Hereda de Enemy)

Métodos

loadAnimation()

SlimeColossus (Hereda de Enemy)

Métodos

loadAnimation()

SmallSlime (Hereda de Enemy)

Métodos

loadAnimation()

INTERFACES

Disparador <<interface>>

Métodos

shoot(ArrayList<Projectile>, List<Enemy>)

WaterPlaceable <<interface>>

StonePlaceable <<interface>>

SupportsPlant <<interface>>

RENDERERS

CardRenderer

Atributos

GameScreen gameScreen

Métodos

render(SpriteBatch batch)

GameRenderer

Atributos

GameScreen gameScreen

SpriteBatch batch

Métodos

render()

HealthBarRenderer

Atributos

GameScreen gameScreen

Métodos

render(SpriteBatch batch)

WaterBarRenderer

Atributos

GameScreen gameScreen

Texture[] frames

Métodos

render(SpriteBatch batch)

dispose()

GameOverRenderer

Atributos

SpriteBatch batch

ShapeRenderer shapeRenderer

Viewport viewport

Métodos

render(boolean victory)

handleInput(GameScreen screen) : boolean

SOAP SYSTEM

SoapDefense

Atributos

float x
float y
int laneIndex
boolean used

Métodos

tryActivate(GameScreen screen)
draw(SpriteBatch batch)
reset()

SoapWave

Atributos

float x
float y
float speed
boolean active

Métodos

update(float delta, GameScreen screen)
draw(SpriteBatch batch)
isActive() : boolean

UTILS

Constants <>static>

Atributos

LANES : int
COLUMNS : int
GRID_START_X : float
GRID_START_Y : float
CURRENT_LEVEL : int

Métodos

getPlantX(int column) : float
getPlantY(int lane) : float
isWaterLane(int lane) : boolean

Assets <>static>>

Atributos

Texture background
Texture cardCornShooter
Texture[] slimeNormalFrames

Métodos

load()
dispose()

Cooldowns

Atributos

corn
papa
water
redBom
lilyPad
maceta
campanilla
champi

Métodos

reset()

Language <>enumeration>>

ES
EN