Game

+ input: Scanner

+ towerDefense(aPlayer: Player, enemyWave: Wave, [][]grid: String, gameon: boolean, i: int)

Extends

Map

+ xlength: int

+ yWidth: int

+ path: String

+ empty: String

+ generateGrid(): String

+ cretatePath ([][]grid:String)

+ printGrid ([][]grid:String)

Use

Wave

+ waveActive: boolean

+ input: Scanner

+ findEnemyAlgorithm (aPlayer: Player, [][]grid: String, anEnemy: Enemy)

+ enemyWave (aPlayer: Player, [][]grid: String, WaveNumber: int)

+ generateWave (aPlayer: Player, [][]grid: String, WaveNumber: int)

Use

Player

+ playerHealth: int

- money: int

+ archerPrice: int

+ sniperPrice: int

+ input: Scanner

+ Player (aHealth: int, inirCurrency: int, [][]grid: String)

+ displayHealth()

+ getHealth (): int

+ getMoney (): int

+ isKilled(): boolean

+ takeDamage (dealtDamage: int)

+ hasEnoughFunds (price:int): boolean

+ hasSurvived(): boolean

Enemy

+ x: int

+ y: int

+ startXIndex: int

+ startYIndex: int

+ endXIndex: int

+ endYIndex: int

+ moneyGained: int

+ dealtDamage: int

+ enemyHealath: int

+ name: String

+ path: String

+ empty: String

+ Enemy (aName: String, anEnemyHealth: int, dealtDamage: int, gainedMoney: int, xcoord: int, ycoord: int)
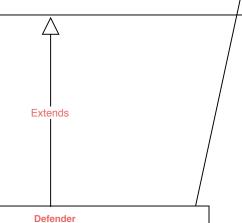
+ getName(): String

+ getXcoord(): int

+ buyDefense(price: int)

+ gainMoney (moneyGained : int)

+ attack([][]grid: String, anEnemy: Enemy, damage: int, xD: int, yD: int, eX: int, eY: int, range: int)

+ getDistance(otherX: int, otherY: int, defenderX: int, defenderY): int

+ enemyIsWithinRange(defenderX: int, defenderY: int, eX: int, eY: int, range: int) : boolean

+ defenderSelection ([][]grid: String)

+ getYcoord(): int

+ getEnemyHealth(): int

+ healthToString (anEnemy: Enemy): String

+ generateEnenmy ([][]grid: String,anEnemy: Enemy)

+ moveEnemy (aMap: Map, [][]grid: String, anEnemy: Enemy, anPlayer: Player)

+ checkEnemyCrossed ([aMap: Map, anEnemy: Enemy)

+ attack (aPlayer:Player)

+ takeDamage (damage: int)

+ checkIfDead ([][]grid: String, aPlayer: Player)

+ isOnMap ([][]grid: String)

+ removeEnemy ([][]grid: String)

+ isDead(): boolean

+ hasCrossed(): boolean

Extends

Defender

- damage: Integer

- xCoord: int

- yCoord: int

- range: int

+ coordInput: Scanner

+ Defender (name: String, [][]grid: String, aDamage: int, aRange: int)

+ getRange(): int

+ getDamage(): int

+ getXCoord(): int

+ getYCoord(): int

+ setXYCoord ([][]grid: String, damage: int, range: int)

+ placeDefense ([][]grid: String, name: String)

+ containsPath ([][]grid: String, xCoord: int, yCoord: int)