Design Class Diagram

SpaceInvader

+ NORMAL_ALIEN_IMAGE_NAME: String
+ POWERFUL_ALIEN_IMAGE_NAME: String
+ MULTIPLE_ALIEN_IMAGE_NAME: String
+ INVULNERABLE_ALIEN_IMAGE_NAME: String
+NORMAL_ALIEN_TYPE_STR: String
+POWERFUL_ALIEN_TYPE_STR: String
+MULTIPLE_ALIEN_TYPE_STR: String
+INVULNERABLE_ALIEN_TYPE_STR: String
+INVULNERABLE_ACTIVE_ALIEN_TYPE_STR: String
+FIRST_ROW_Y_LOCATION:int
+NORMAL_ALIEN_LIVES: int
+POWERFUL_ALIEN_LIVES:int
+MAX_TOP_ROW_LOCATION:int
-nbRows : int
-nbCols :int
- isAutoTesting : boolean
-speedincreased : boolean
- properties: Properties
- speedincreased: boolean
- logResult: StringBuilder
-powerfulAlienLocations:ArrayList<Point>
-invulnerableAlienLocations:ArrayList<Point>
-multipleAlienLocations:ArrayList<Point>
-alienGrid : Alien[][]
-ss:SpaceShip
-previousIncrease:int
-speed: int
- movements: List<String>

- convertFromProperty(propertyName:String) : ArrayList<Alien>
- setupAlienLocations():void
-arrayContains:boolean
- setupAliens():void
- setupSpaceShip():void
+ runApp(IsdisplayingUI: Boolean): String
+ RowAboveAlienGrid(): int
+ leftMostCol():int
+AddAlienRowOnTop(yLocation:int ,xLocation:int ,direction:double ,nbSteps:int) : void()
+ act(): void()
+notifyAlienHit(actors:List<Actor>):boolean
+ isAlienInvulnerable(actors:List<Actor>):boolean
+ setIsGameOver(isOver : boolean) : void
+ keyPressed(evt : KeyEvent) :boolean
+increaseAllAliensSpeed():void
+AlienfirstNotRemovedInstance():Alien

Driver

+ DEFAULT_PROPERTIES_PATH: String
- propertiesPath: String
- logResult: String

+ main(String[] args): Void

PropertiesLoader

+ loadPropertiesFile(propertiesFile: String): Properties

Actor

....

+ act ():void
+ setLocation (location: Location):void
+turn():void
+move():void

Location

....

+ getX():int
+getY():int

intializes

location

1

*

1

*

1

Bomb

+ reset(): void
+ act(): void

0..*   1

Spaceship

- nbShots: Int
- spaceInvader: SpaceInvader
- isAutoTesting: Boolean
- controls: List<String>
- controlIndex: Int

+ keyPressed(KeyEvent keyEvent): Boolean
- moveTo(Location location) : void
+ act() : void
- autoMove(): Void
+ keyReleased(KeyEvent keyEvent): Boolean

Alien

- MAXNBSTEPS: int
- nbSteps: int
- speed: int
- isMoving: boolean
- is AutoTesting: boolean
- movements: List<String>
- movementIndex: int
- type: String
- rowIndex: int
- colIndex: int
- lives: int
- remainingNbSteps: int
- speedIncreased: bool

- checkMovements(): void
+ act(): void
+ increaseSpeed(speed1:int): void
+reset() : void
+ decreaseLives() : void
+ toString(): String
+ CalculateRemainingSteps():void

Explosion

+ act(): void

InvulnerableAlien

- isvulnerable: boolean
- TRANSPARENT_TIME: int
- transparentStepCount: int

+handleTransparent(): void
+ act(): void
+ decreaseLives(): void

MultiplyAlien

- isMultiplied: boolean

+ act(): void
- randomizer(): boolean

PowerfulAlien