A04 UML Diagram

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Client Side

Server Side

JPanel

KeyListener <Interface>

JFrame

Remote

ModelInterface <Interface>

+getCells():Cell[][]
+getPlayers():ArrayList<Player>
+registerNewPlayer():int
+movePlayer(id:int, dx:int, dy:int)
+playerCollectsResources(id:int, x:int, y:int)
+getPlayerResourceCount(id:int)

Runnable

UnicastRemoteObject

Runner

+main(args:String[])

Grid

-cells:Cell[][]
-players:ArrayList<Player>
-myPlayerId:int
-model:ModelInterface

+Grid(cells:Cell[][], players:ArrayList<Player>,
myPlayerId:int, model:ModelInterface)
+paintComponent(g:Graphics)
+setPlayers(players:ArrayList<Player>)
+setCells(cells:Cell[][])
+keyPressed(e:KeyEvent)

View

+cells:Cell[][]
+view:JPanel
+cl:CardLayout
+controller:Controller
+GoL:Grid
+players:<ArrayList<Player>

View(model:ModelInterface, playerId:int)

Controller

-view:View

+Controller(model:ModelInterface,
view:View)
+update(cells:Cell[][],
players:ArrayList<Player>)

Model

-cells:Cell[][]
-ticks:int
-timer:Timer
-players:ArrayList<Player>
-uniqueInstance:Model

+Model()
+getUniqueInstance():Model
+getCells()
+setCells(cells:Cell[][])
-liveNeighborCount(cells:Cell[][], row:int, col:int)
+growthThreshold(growthParam:float, activeNeighbors:int):float
+resourceGrowth(cell:Cell, threshold:float)
+tick()
+run()
+main(args:String[])
+getPlayers():ArrayList<Player>
+registerNewPlayer():int
+movePlayer(id:int, dx:int, dy:int)
+playerCollectsResource(id:int, x:int, y:int)
+getPlayerResourceCount(id:int):int

Serializable <Interface>

Serializable<Interface>

SimpleCellFactory

+createCell(x:int, y:int,
isAlive:boolean,
resources:int)

Player

-id:int
-resourcesCollected:int
-x:int
-y:int
-canSeePlayer:boolean
-canSeeResources:boolean

+Player(id:int)
+move(dx:int, dy:int)
+getId():int
+setId(id:int)
+getResourcesCollected():int
+setResourcesCollected(resourcesCollected:int)
+getX():int
+getY():int
+setX(x:int)
+setY(y:int)

Cell

-x:int
-y:int
-isAlive:boolean
-resources:int

+Cell(x:int, y:int, isAlive:boolean,resources:int)
+getX():int
+getY():int
+getIsAlive():boolean
+getResources():int
+setIsAlive(b:boolean)
+setResources(value:int)

GameController

+aClusterPerc:float
+bClusterPerc:float
+aClusterCenterX:int
+aClusterCenterY:int
+bClusterCenterX:int
+bClusterCenterY:int
+factory:SimpleCellFactory
+grid:Cell[][]
+totalStartingResources:int

+GameController(aClusterPerc:int,
totalStartingResources:int)
+rando(lowerBound:int,
upperBound:int):int
+inRadius(centerX:int, centerY:int,
candidateX:int, candidateY:int,
maxDist:int):boolean
+generateResourcesForCluster(centerX:int,
centerY:int, totalResources)
+createCells():Cell[][]
+main(args:String[])