MowerStatus

- coord: Coordinate
- direction: Direction
- currentEnergy: int
- isImmobilized: boolean
- isStalled: boolean

+ isImmobilized() : boolean
+ isStalled() : boolean

Coordinate

- x: int
- y: int

<<enumeration>>
Direction

east
south
west
north
southeast
northeast
southwest
northwest

Surrounding

- status: Lawn.SquareStatus[]

Report

- totalSquareCount: int
- initalGrassCount: int
- cutGrassCount: int
- turnCount: int

Simulation

- setting: ScenarioSetting
- lawn: Lawn
- mowers: List<LawnMower>
- mowerStatusById: HashMap<int, MowerStatus>
- curTurnCount: int

+ readFile(path: String) : ScenarioSetting
+ pollMowerAction() : void
+ moveMower(Move) : void
+ updateLawnAndMowerStatus(Move, Lawn) : MowerStatus
+ scanSurrounding() : Surrounding
+ generateSurrounding(Coordinate, Lawn) : Surrounding
+ controlRunLoop() : void
+ shouldRun() : boolean
+ generateReport() : Report

LawnMower

- originalDirection: MowerStatus.Direction
- id: int
- lawnMowerCount : int
- simulation: Simulation
- partialMap: HashMap<Coordinate, Lawn.SquareStatus>
- relCoord: Coordinate
- nextAction: Action.Type
- sharedInfo: SharedInfo

+ chooseAction() : Action
+ moveMower(Simulation, Move) : void
+ moveSetUp() : Move
+ scanSurrounding(Simulation) : Surrounding
+ updatePartialMap(Surrounding) : HashMap<Coordinate, Lawn.SquareStatus>
+ updateRelCoord(Move) : Coordinate
+ updateSharedInfo(HashMap, Coordinate) : void
+ communicate(SharedInfo) : void
+ updateRelCoordByID(SharedInfo) : void
+ updateRelCoordByID(SharedInfo) : void

SharedInfo

- id: int
- partialMap: HashMap<Coordinate, Lawn.SquareStatus>
- relCoord: Coordinate

<<enumeration>>
SquareStatus

mower_id
empty
grass
crater
fence
energy

Lawn

- status: SquareStatus[ ][ ]
- initalGrassCount: int
- height: int
- width: int

+ countGrassCut() : int
+ isAllCut() : boolean

ScenarioSetting

- lawnWidth: int
- lawnLength: int
- lawnMowerCount: int
- mowerStatusById: HashMap<int, MowerStatus>
- lawnStatus: Lawn.SquareStatus[ ] [ ]
- craterCount: int
- padCoordinates: List<Coordinate>
- craterCoordinates: List<Coordinate>
- maxTurnCount: int
- energyCapacity: int

Action

- type: Type

Move

- type: Action.Type
- steps: int
- direction: MowerStatus.Direction
- rotate: boolean

<<enumeration>>
Type

Move
Scan

Scan

- type: Action.Type