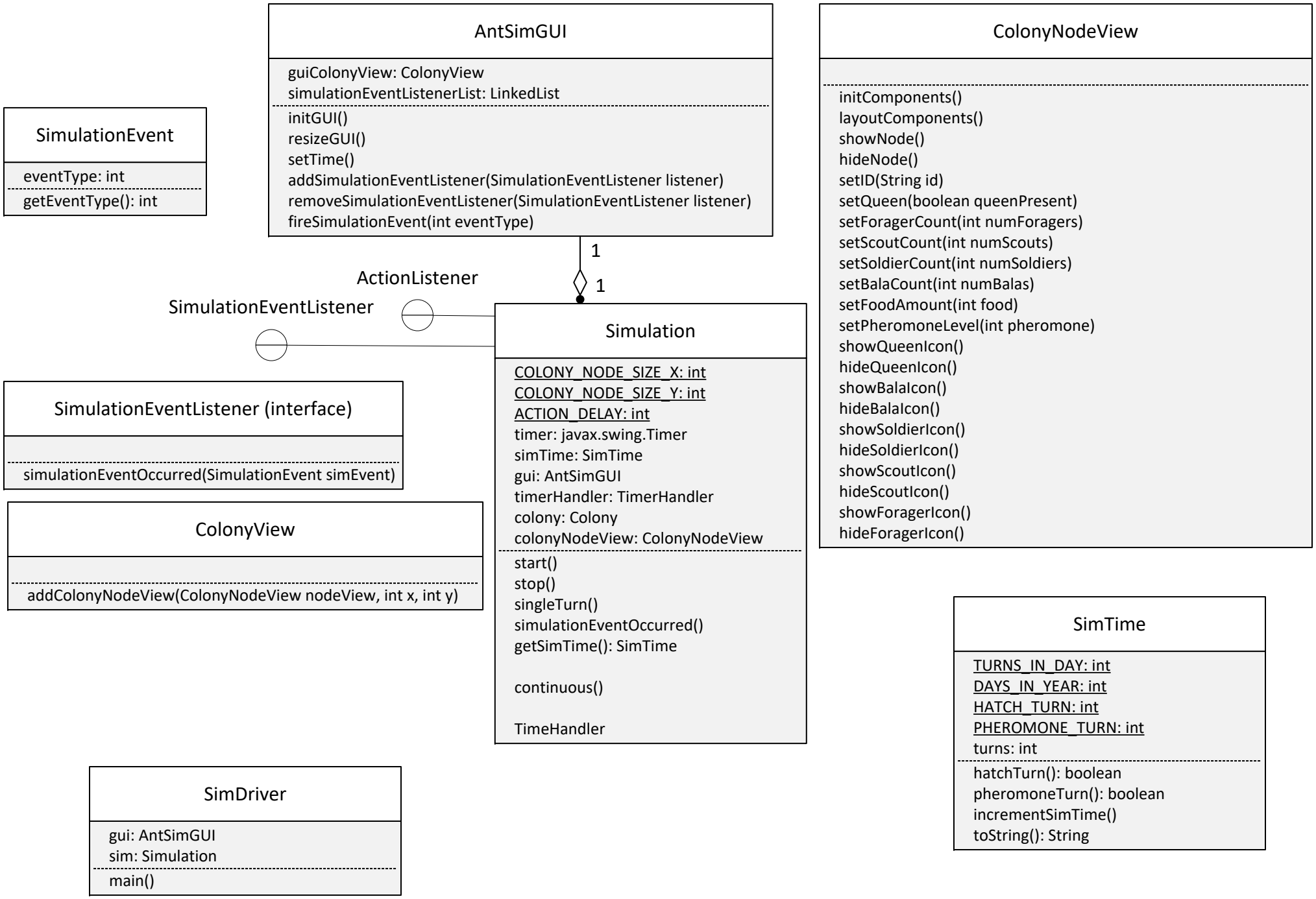
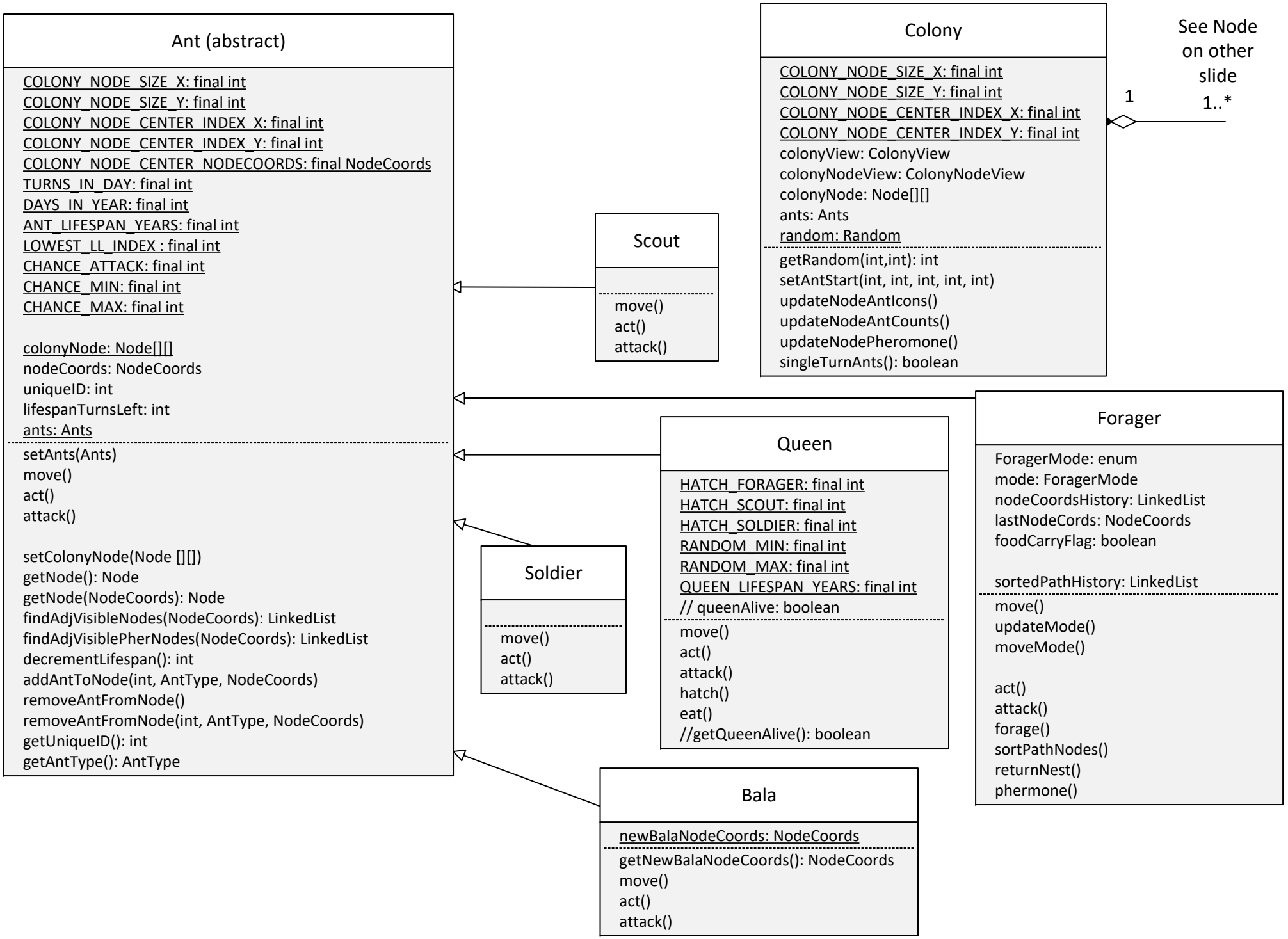
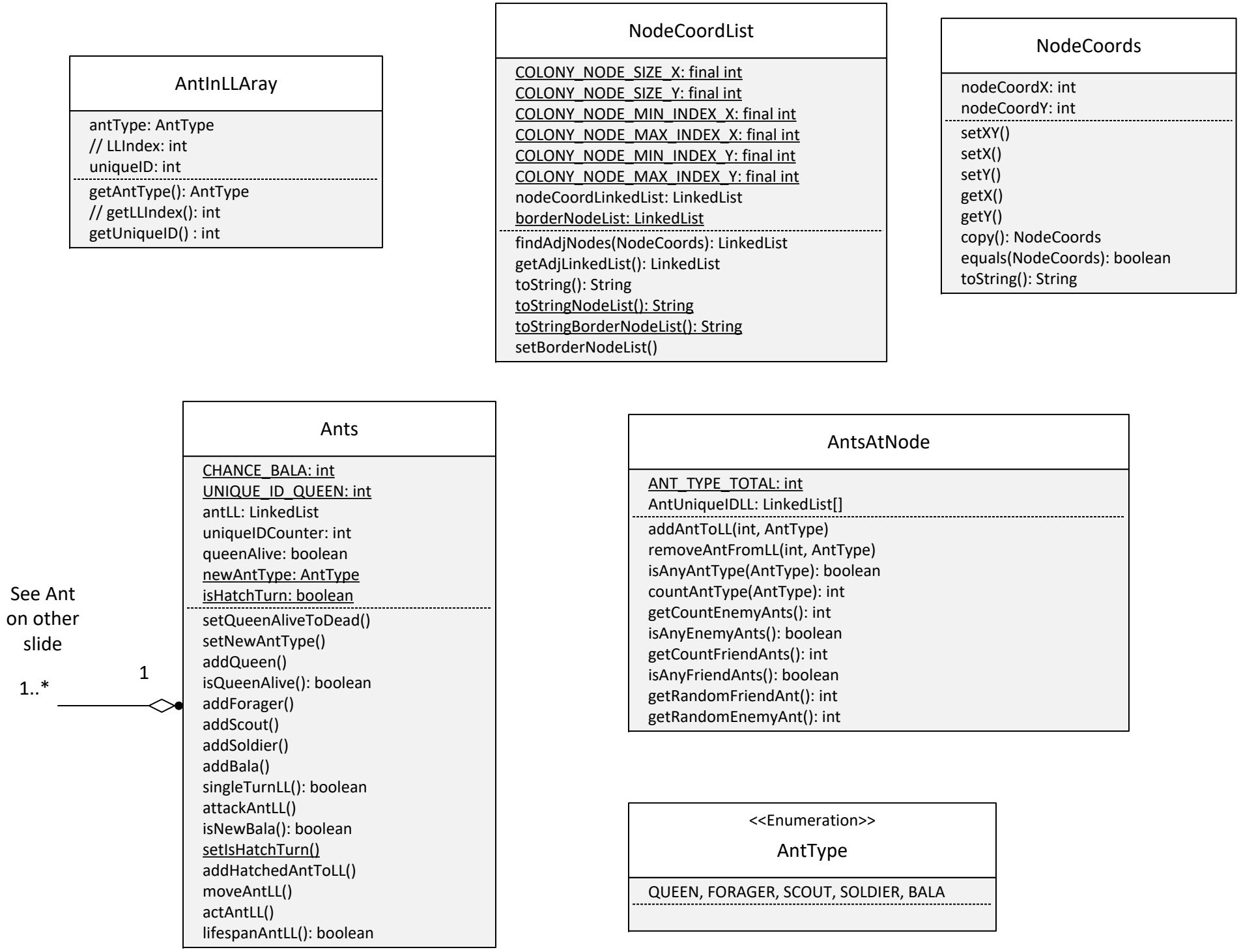
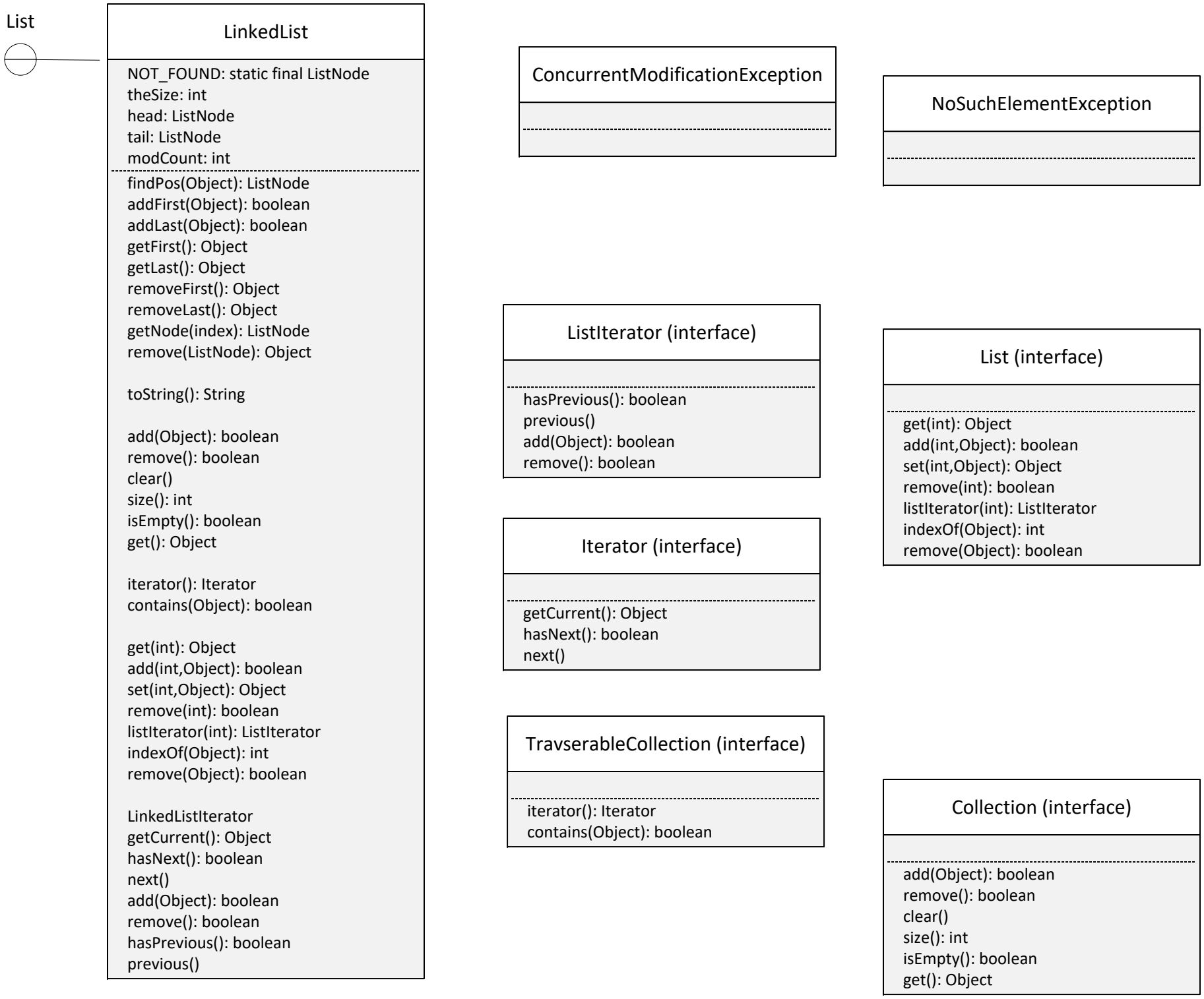
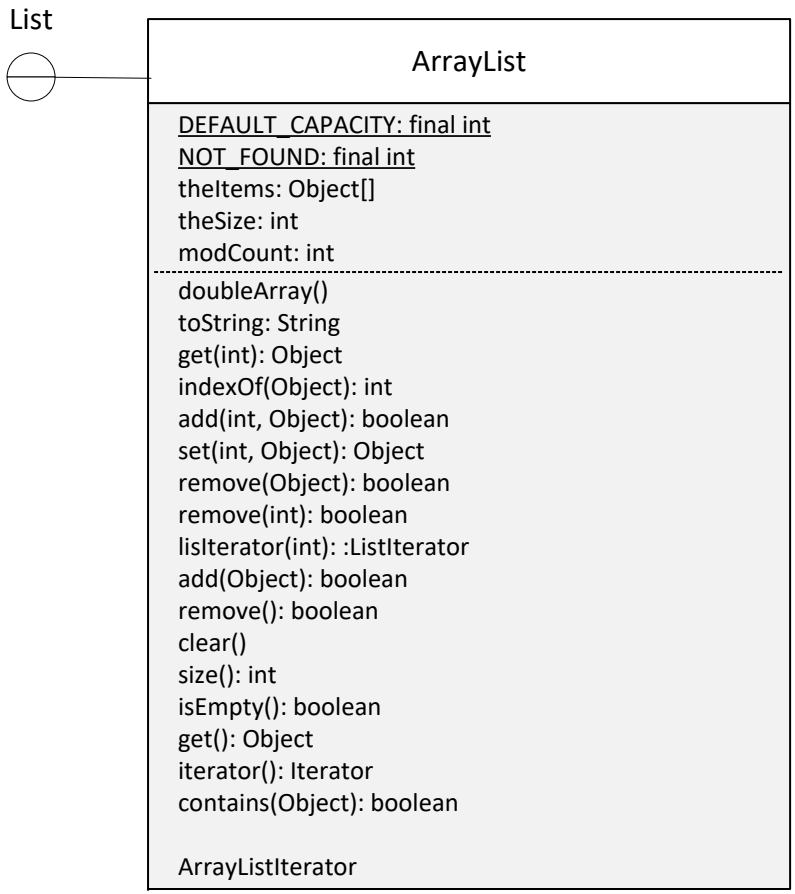

AntSimGUI
guiColonyView: ColonyView
simulationEventListenerList: LinkedList
initGUI()
resizeGUI()
setTime()
addSimulationEventListener(SimulationEventListener listener)
removeSimulationEventListener(SimulationEventListener listener)
fireSimulationEvent(int eventType)
ColonyNodeView
initComponents()
layoutComponents()
showNode()
hideNode()
setID(String id)
setQueen(boolean queenPresent)
setForagerCount(int numForagers)
setScoutCount(int numScouts)
setSoldierCount(int numSoldiers)
setBalaCount(int numBalas)
setFoodAmount(int food)
setPheromoneLevel(int pheromone)
showQueenIcon()
hideQueenIcon()
showBalaIcon()
hideBalaIcon()
showSoldierIcon()
hideSoldierIcon()
showScoutIcon()
hideScoutIcon()
showForagerIcon()
hideForagerIcon()
SimulationEvent
eventType: int
getEventType(): int
1
1
ActionListener
SimulationEventListener
Simulation
COLONY_NODE_SIZE_X: int
COLONY_NODE_SIZE_Y: int
ACTION_DELAY: int
timer: javax.swing.Timer
simTime: SimTime
gui: AntSimGUI
timerHandler: TimerHandler
colony: Colony
colonyNodeView: ColonyNodeView
start()
stop()
singleTurn()
simulationEventOccurred()
getSimTime(): SimTime
continuous()
TimeHandler
SimulationEventListener (interface)
simulationEventOccurred(SimulationEvent simEvent)
ColonyView
addColonyNodeView(ColonyNodeView nodeView, int x, int y)
SimTime
TURNS_IN_DAY: int
DAYS_IN_YEAR: int
HATCH_TURN: int
PHEROMONE_TURN: int
turns: int
hatchTurn(): boolean
pheromoneTurn(): boolean
incrementSimTime()
toString(): String
SimDriver
gui: AntSimGUI
sim: Simulation
main()


Ant (abstract)
COLONY_NODE_SIZE_X: final int
COLONY_NODE_SIZE_Y: final int
COLONY_NODE_CENTER_INDEX_X: final int
COLONY_NODE_CENTER_INDEX_Y: final int
COLONY_NODE_CENTER_NODECOORDS: final NodeCoords
TURNS_IN_DAY: final int
DAYS_IN_YEAR: final int
ANT_LIFESPAN_YEARS: final int
LOWEST_LL_INDEX : final int
CHANCE_ATTACK: final int
CHANCE_MIN: final int
CHANCE_MAX: final int
colonyNode: Node[][]
nodeCoords: NodeCoords
uniqueID: int
lifespanTurnsLeft: int
ants: Ants
setAnts(Ants)
move()
act()
attack()
setColonyNode(Node [][])
getNode(): Node
getNode(NodeCoords): Node
findAdjVisibleNodes(NodeCoords): LinkedList
findAdjVisiblePherNodes(NodeCoords): LinkedList
decrementLifespan(): int
addAntToNode(int, AntType, NodeCoords)
removeAntFromNode()
removeAntFromNode(int, AntType, NodeCoords)
getUniqueID(): int
getAntType(): AntType
Colony
COLONY_NODE_SIZE_X: final int
COLONY_NODE_SIZE_Y: final int
COLONY_NODE_CENTER_INDEX_X: final int
COLONY_NODE_CENTER_INDEX_Y: final int
colonyView: ColonyView
colonyNodeView: ColonyNodeView
colonyNode: Node[][]
ants: Ants
random: Random
getRandom(int,int): int
setAntStart(int, int, int, int, int)
updateNodeAntIcons()
updateNodeAntCounts()
updateNodePheromone()
singleTurnAnts(): boolean
1
1..*
See Node on other slide
Scout
move()
act()
attack()
Queen
HATCH_FORAGER: final int
HATCH_SCOUT: final int
HATCH_SOLDIER: final int
RANDOM_MIN: final int
RANDOM_MAX: final int
QUEEN_LIFESPAN_YEARS: final int
// queenAlive: boolean
move()
act()
attack()
hatch()
eat()
//getQueenAlive(): boolean
Forager
ForagerMode: enum
mode: ForagerMode
nodeCoordsHistory: LinkedList
lastNodeCords: NodeCoords
foodCarryFlag: boolean
sortedPathHistory: LinkedList
move()
updateMode()
moveMode()
act()
attack()
forage()
sortPathNodes()
returnNest()
phermone()
Soldier
move()
act()
attack()
Bala
newBalaNodeCoords: NodeCoords
getNewBalaNodeCoords(): NodeCoords
move()
act()
attack()


AntInLLAray
antType: AntType
// LLIndex: int
uniqueID: int
getAntType(): AntType
// getLLIndex(): int
getUniqueID() : int
NodeCoordList
COLONY_NODE_SIZE_X: final int
COLONY_NODE_SIZE_Y: final int
COLONY_NODE_MIN_INDEX_X: final int
COLONY_NODE_MAX_INDEX_X: final int
COLONY_NODE_MIN_INDEX_Y: final int
COLONY_NODE_MAX_INDEX_Y: final int
nodeCoordLinkedList: LinkedList
borderNodeList: LinkedList
findAdjNodes(NodeCoords): LinkedList
getAdjLinkedList(): LinkedList
toString(): String
toStringNodeList(): String
toStringBorderNodeList(): String
setBorderNodeList()
NodeCoords
nodeCoordX: int
nodeCoordY: int
setXY()
setX()
setY()
getX()
getY()
copy(): NodeCoords
equals(NodeCoords): boolean
toString(): String
Ants
CHANCE_BALA: int
UNIQUE_ID_QUEEN: int
antLL: LinkedList
uniqueIDCounter: int
queenAlive: boolean
newAntType: AntType
isHatchTurn: boolean
setQueenAliveToDead()
setNewAntType()
addQueen()
isQueenAlive(): boolean
addForager()
addScout()
addSoldier()
addBala()
singleTurnLL(): boolean
attackAntLL()
isNewBala(): boolean
setIsHatchTurn()
addHatchedAntToLL()
moveAntLL()
actAntLL()
lifespanAntLL(): boolean
See Ant on other slide
1..*
1
AntsAtNode
ANT_TYPE_TOTAL: int
AntUniqueIDLL: LinkedList[]
addAntToLL(int, AntType)
removeAntFromLL(int, AntType)
isAnyAntType(AntType): boolean
countAntType(AntType): int
getCountEnemyAnts(): int
isAnyEnemyAnts(): boolean
getCountFriendAnts(): int
isAnyFriendAnts(): boolean
getRandomFriendAnt(): int
getRandomEnemyAnt(): int
<<Enumeration>>
AntType
QUEEN, FORAGER, SCOUT, SOLDIER, BALA


Node
nodeView: ColonyNodeView
adjNodeList: NodeCoordList
nodeVisible: boolean
antsAtNode: AntsAtNode
foodUnits: int
pherUnits: int
transitFoodUnits: int
getNodeVisible(): boolean
getAdjNodeList: NodeCoordList
addAntToNode(int, AntType)
removeAntFromNode(int, AntType)
updateAntIcons()
showAntIcon(AntType)
hideAntIcon(AntType)
updateAntCounts()
setAntCount(AntType, int)
setNodeFood(int)
decrementFood(): int
incrementFood()
setNodePher(int)
getFood(): int
getNodePher(): int
incrementNodePher()
updatePheromone()
incrementTransitFood()
deceremenTransitFood()
getTransitFood(): int
getCountEnemyAnts(): int
isAnyEnemyAnts(): boolean
getCountFriendAnts(): int
getRandomFriendAnt(): int
getRandomEnemyAnt(): int
spawnBala()
pherDrop()
showNode()
hideNode()
setID(String id)
setQueen(boolean queenPresent)
setForagerCount(int numForagers)
setScoutCount(int numScouts)
setSoldierCount(int numSoldiers)
setBalaCount(int numBalas)
setFoodAmount(int food)
setPheromoneLevel(int pheromone)
showQueenIcon()
hideQueenIcon()
showBalaIcon()
hideBalaIcon()
showSoldierIcon()
hideSoldierIcon()
showScoutIcon()
hideScoutIcon()
showForagerIcon()
hideForagerIcon()


List
LinkedList
NOT_FOUND: static final ListNode
theSize: int
head: ListNode
tail: ListNode
modCount: int
findPos(Object): ListNode
addFirst(Object): boolean
addLast(Object): boolean
getFirst(): Object
getLast(): Object
removeFirst(): Object
removeLast(): Object
getNode(index): ListNode
remove(ListNode): Object
toString(): String
add(Object): boolean
remove(): boolean
clear()
size(): int
isEmpty(): boolean
get(): Object
iterator(): Iterator
contains(Object): boolean
get(int): Object
add(int,Object): boolean
set(int,Object): Object
remove(int): boolean
listIterator(int): ListIterator
indexOf(Object): int
remove(Object): boolean
LinkedListIterator
getCurrent(): Object
hasNext(): boolean
next()
add(Object): boolean
remove(): boolean
hasPrevious(): boolean
previous()
ConcurrentModificationException
NoSuchElementException
ListIterator (interface)
hasPrevious(): boolean
previous()
add(Object): boolean
remove(): boolean
List (interface)
get(int): Object
add(int,Object): boolean
set(int,Object): Object
remove(int): boolean
listIterator(int): ListIterator
indexOf(Object): int
remove(Object): boolean
Iterator (interface)
getCurrent(): Object
hasNext(): boolean
next()
TravserableCollection (interface)
iterator(): Iterator
contains(Object): boolean
Collection (interface)
add(Object): boolean
remove(): boolean
clear()
size(): int
isEmpty(): boolean
get(): Object


List
ArrayList
DEFAULT_CAPACITY: final int
NOT_FOUND: final int
theItems: Object[]
theSize: int
modCount: int
doubleArray()
toString: String
get(int): Object
indexOf(Object): int
add(int, Object): boolean
set(int, Object): Object
remove(Object): boolean
remove(int): boolean
lisIterator(int): :ListIterator
add(Object): boolean
remove(): boolean
clear()
size(): int
isEmpty(): boolean
get(): Object
iterator(): Iterator
contains(Object): boolean
ArrayListIterator