

pacman.py

PacmanRules
PACMAN_SPEED : int
applyAction(state, action) consume(position, state) getLegalActions(state)

GhostRules
GHOST_SPEED : float
applyAction(state, action, ghostIndex) canKill(pacmanPosition, ghostPosition) checkDeath(state, agentIndex) collide(state, ghostState, agentIndex) decrementTimer(ghostState) getLegalActions(state, ghostIndex) placeGhost(state, ghostState)

ClassicGameRules
initialState quiet : bool timeout : int
agentCrash(game, agentIndex) getMaxStartupTime(agentIndex) getMaxTimeWarnings(agentIndex) getMaxTotalTime(agentIndex) getMoveTimeout(agentIndex) getMoveWarningTime(agentIndex) getProgress(game) lose(state, game) newGame(layout, pacmanAgent, ghostAgents, display, quiet, catchExceptions) process(state, game) win(state, game)

Main
Args: sys.argv[1:]
readCommand(sys.argv[1:]) runGames(layout, pacman, ghosts, display, numGames, record, numTraining=0, catchExceptions=False, timeout=30)

GameState
data explored : set
deepCopy() generatePacmanSuccessor(action) generateSuccessor(agentIndex, action) getAndResetExplored() getCapsules() getFood() getGhostPosition(agentIndex) getGhostPositions() getGhostState(agentIndex) getGhostStates() getLegalActions(agentIndex) getLegalPacmanActions() getNumAgents() getNumFood() getPacmanPosition() getPacmanState() getScore() getWalls() hasFood(x, y) hasWall(x, y) initialize(layout, numGhostAgents) isLose() isWin()

initialState

pacmanAgents.py

GreedyAgent
evaluationFunction
getAction(state)

LeftTurnAgent
getAction(state)

game.py

Actions
TOLERANCE : float
directionToVector(direction, speed) getLegalNeighbors(position, walls) getPossibleActions(config, walls) getSuccessor(position, action) reverseDirection(action) vectorToDirection(vector)

Configuration
direction pos
generateSuccessor(vector) getDirection() getPosition() isInteger()

Agent
index : int
getAction(state)

AgentState
configuration isPacman numCarrying : int numReturned : int scaredTimer : int start
copy() getDirection() getPosition()

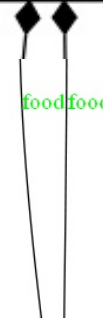
FixedRandom
random : Random

Game
OLD_STDERR : NoneType OLD_STDOUT : NoneType agentCrashed : bool agentOutput agentTimeout : bool agents catchExceptions : bool display gameOver : bool moveHistory : list muteAgents : bool numMoves : int rules startingIndex : int state totalAgentTimeWarnings totalAgentTimes
getProgress() mute(agentIndex) run() unmute()

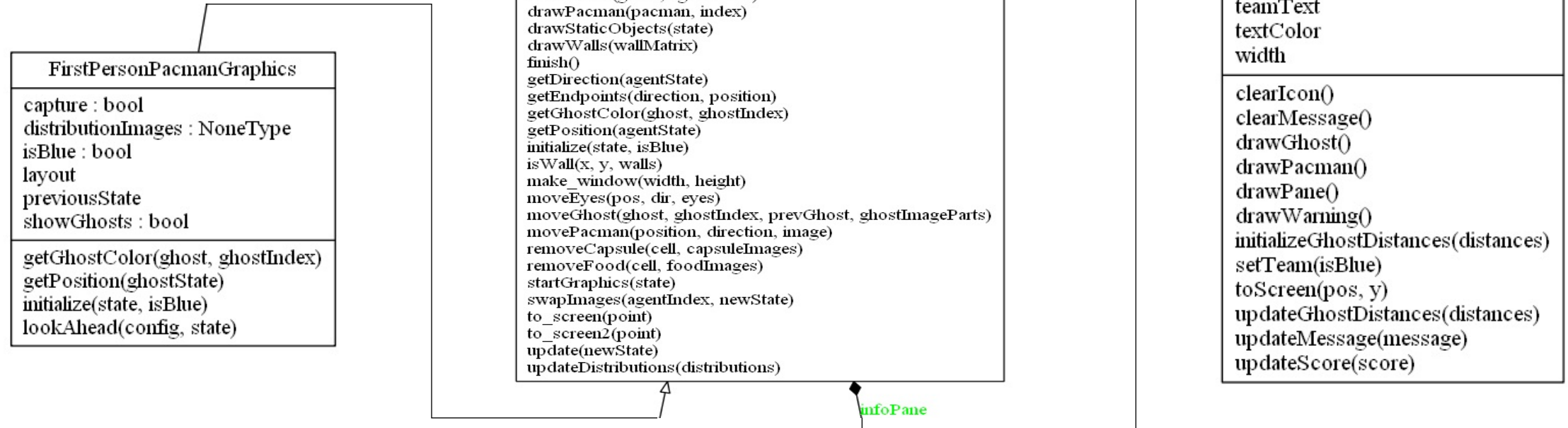
GameStateData
agentStates : list capsules food layout score : int scoreChange : int
copyAgentStates(agentStates) deepCopy() initialize(layout, numGhostAgents)

Grid
CELLS_PER_INT : int data height width
asList(key) copy() count(item) deepCopy() packBits() shallowCopy()

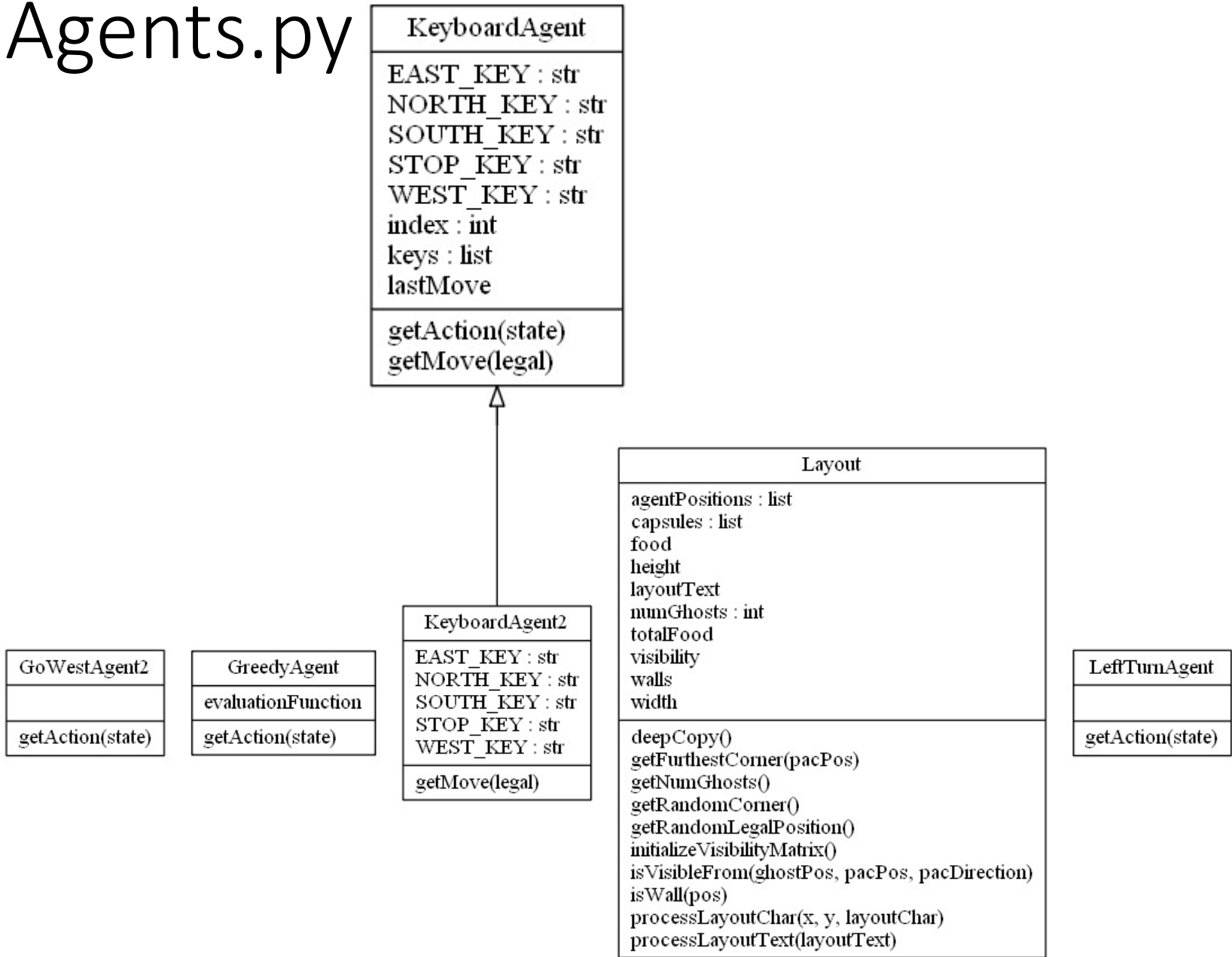
GhostRules
GHOST_SPEED : float
applyAction(state, action, ghostIndex) canKill(pacmanPosition, ghostPosition) checkDeath(state, agentIndex) collide(state, ghostState, agentIndex) decrementTimer(ghostState) getLegalActions(state, ghostIndex) placeGhost(state, ghostState)



graphicsdisplay.py



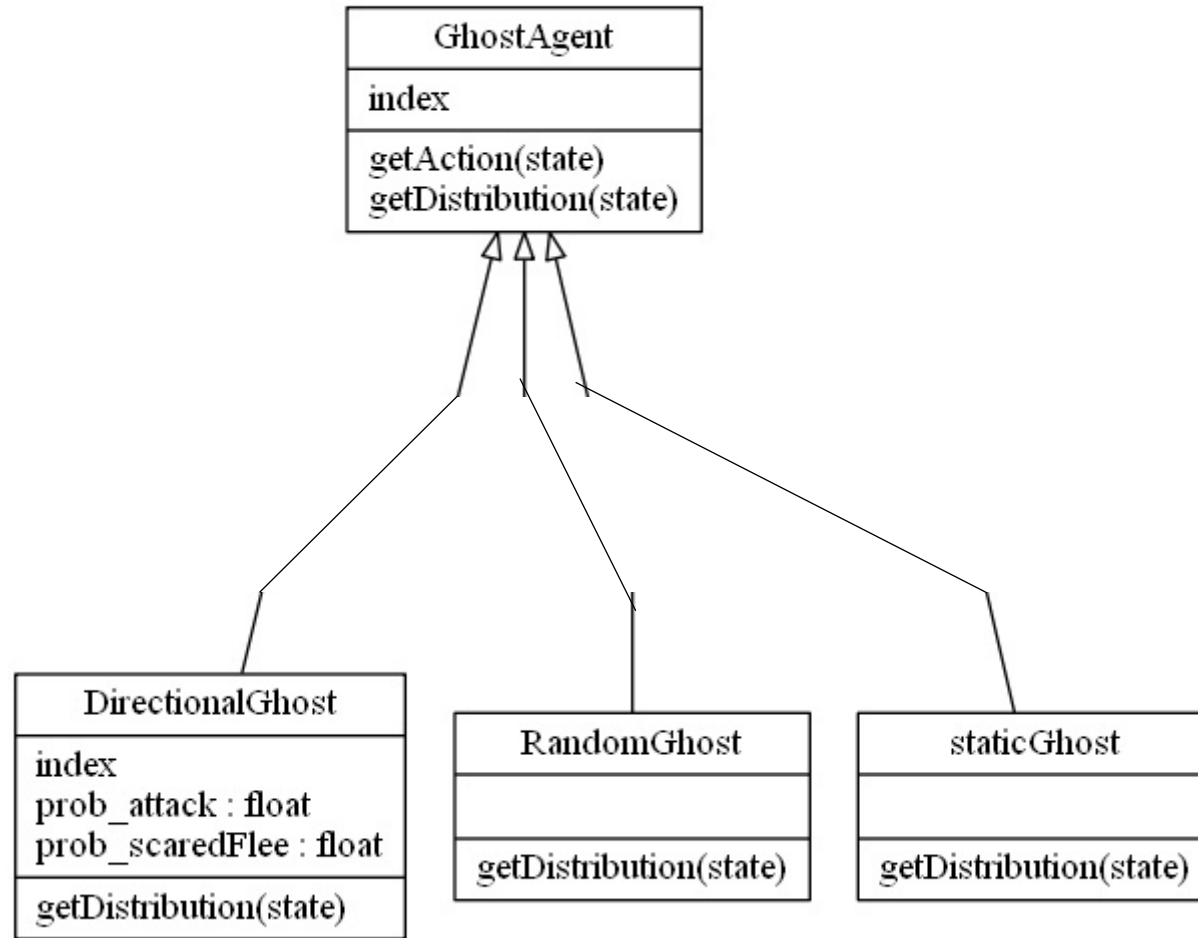
keyboardAgents.py



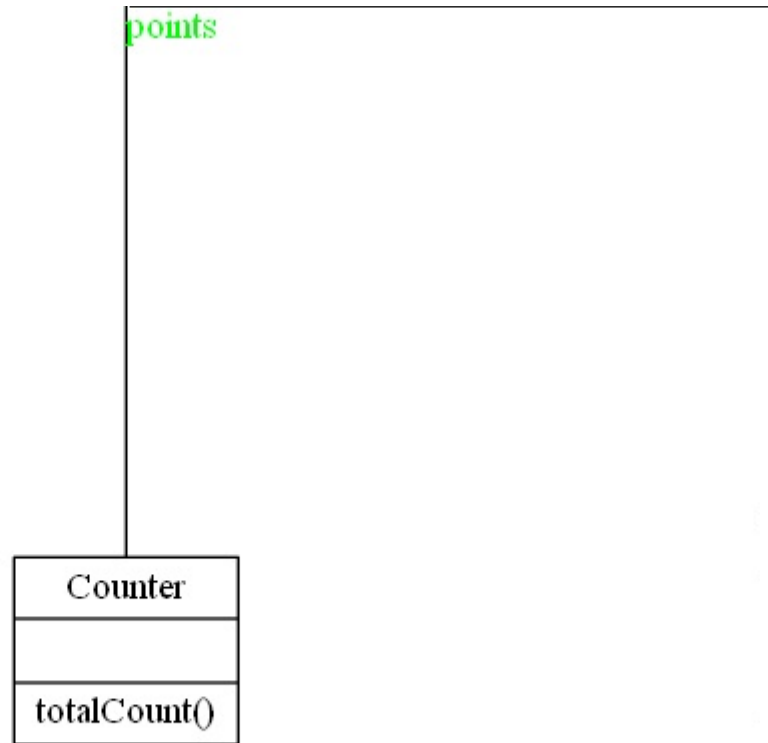
layout.py

Layout
<code>agentPositions : list</code> <code>capsules : list</code> <code>food</code> <code>height</code> <code>layoutText</code> <code>numGhosts : int</code> <code>totalFood</code> <code>visibility</code> <code>walls</code> <code>width</code>
<code>deepCopy()</code> <code>getFurthestCorner(pacPos)</code> <code>getNumGhosts()</code> <code>getRandomCorner()</code> <code>getRandomLegalPosition()</code> <code>initializeVisibilityMatrix()</code> <code>isVisibleFrom(ghostPos, pacPos, pacDirection)</code> <code>isWall(pos)</code> <code>processLayoutChar(x, y, layoutChar)</code> <code>processLayoutText(layoutText)</code>

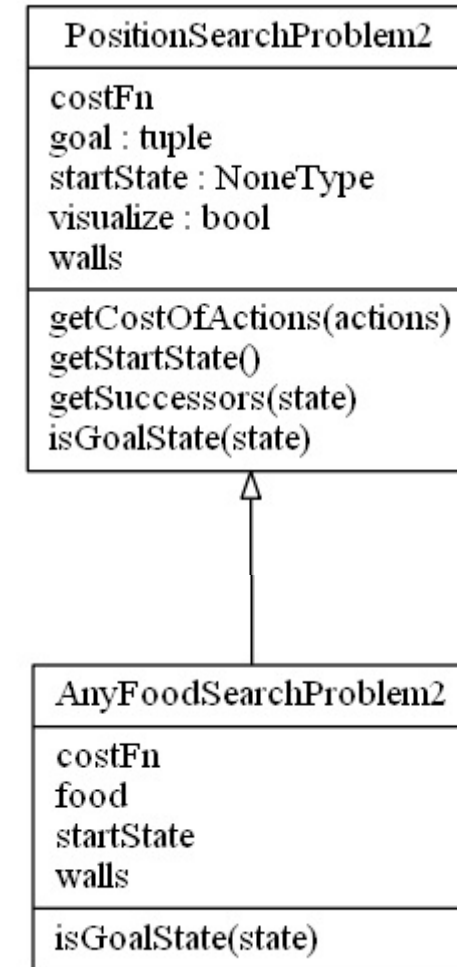
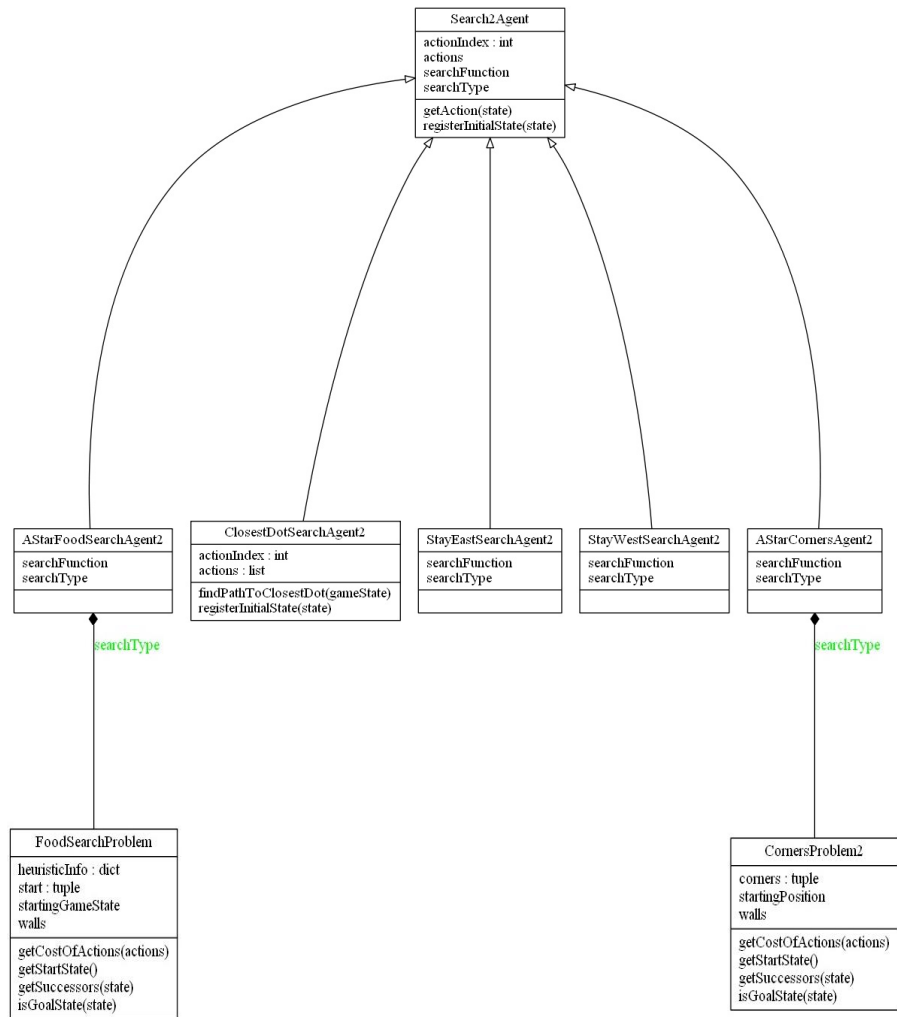
ghostAgents.py



grading.py



search2Agents.py



search2.py

SearchProblem2
<code>getCostOfActions(actions)</code> <code>getStartState()</code> <code>getSuccessors(state)</code> <code>isGoalState(state)</code>

util.py

FixedRandom
random : Random

PriorityQueue
count : int heap : list
isEmpty() pop() push(item, priority) update(item, priority)

Stack
list : list
isEmpty() pop() push(item)

TimeoutFunction
function timeout
handle_timeout(signum, frame)

TimeoutFunctionException

WritableNull
write(string)

Queue
list : list
isEmpty() pop() push(item)

PriorityQueueWithFunction
priorityFunction
push(item)

Counter
argMax() copy() divideAll(divisor) incrementAll(keys, count) normalize() sortedKeys() totalCount()