The Wumpus lives in a dark and dangerous cave. The mission of the player is get as much gold as possible without getting eaten by the wumpus.

http://www.cs.tamu.edu/people/rtr7684/gridworld/

So what is a Wumpus?


The object of the game is for the player to get as much gold as possible and climb back out of the cave. The player is an arrow, which they can shoot to defend themselves against the Wumpus. They have to accomplish their mission without getting eaten by the Wumpus, or falling down a bottomless pit. The player is given 1000 points for escaping with the gold, but -1 points are taken for each action, and there is a 10,000 point penalty for being killed.
Percepts of an Agent in the Wumpus World

- Glitter - in the squares with gold.
- Stench - in the square with the Wumpus and the squares directly (not diagonally) adjacent to it
- Breeze - in the squares adjacent to a pit.
- Bump - if the agent has walked into a wall
- Scream - if the Wumpus is killed
- The agent cannot perceive its own location
- Percepts are given in a 5 symbol list:
  - [Stench, Breeze, Glitter, Bump, Scream]
Actions of the Agent in the Wumpus World

- The agent can move forward
- Go right or left
- Shoot an arrow in the direction it is facing
- Pick up gold
- Die (if it gets eaten by the Wumpus or falls in to a pit)
- Climb out of the cave

The Agent’s First Step

Agents in the Wumpus World
Dumb Wumpus Agent

- The DumbWumpus is not really a smart agent. It discards the percepts that are generated for him by the environment and acts in a purely random fashion. No matter what happens around him this agent always does anything without caring the least about the result of its actions. Of course it does not even keep track about its location in the cave. Therefore it will rarely ever leave the cave alive and even less often while carrying a piece of gold.

Reflex Wumpus Agent

The reflex agent reacts shortsightedly to his percepts without keeping any memory of prior actions or the generation of an internal field representation.

Strategy for the reflex agent:
- If the agent perceives a glitter it grabs the gold.
- If it perceives stench it randomly shoots in any of the four directions.
- For every other percept the agent either moves randomly or tries to climb out of the cave.
Arraymaster/Hashmaster Agent

The agent decides for its next action by pondering over the action its ancestor concluded to be best and either taking it or finding a better action.

- If the reasoning method of the ancestor comes up with an action that leads to any field already visited, the agent searches for the next field that has not yet been visited and goes there.
- If the reasoning method of the ancestor comes up with an action that leads to any field already visited and the agent cannot find a field that is worth being visited (by either being unsafe or already visited) the agent calculates a way home and leaves the cave.

This strategy allows the agent to find every piece of gold in the cave that is located at a place that is reachable safely by the agent.

Any Questions???