

Christopher Lim
Kyle Chua

CSINTSY - S15

MCO1 - Technical Report

1. Define the goal of the GOLD MINER agent
 - The goal of the Gold Miner is to land on the Gold Pot and avoid the Pit that exists throughout the board.

2. Formulate the problem
 - Miner has only 3 moves namely:
 - Scan
 - Front
 - Rotate

 - The miner has to go to the goal state, which is to find and go to the Gold Pot, while avoiding the pits and using useful beacons through the usage of the three available moves.

3. Determine the specific states and configurations that the agent operates on

Random

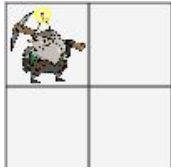
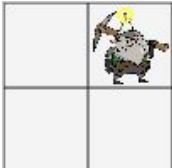


- Generated number is 1
- Generated number is 2

Smart

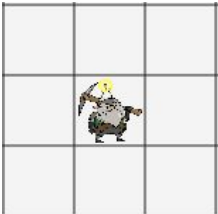
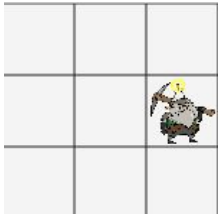
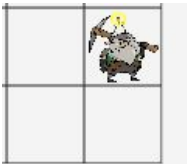

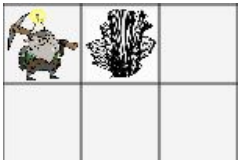
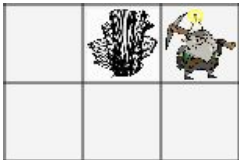
- Scanned nothing
- Scanned a Pit
- Scanned a Beacon
- Scanned the Gold Pot








- Determine the specific actions, and the states (configurations) on which the actions are applicable (include illustrations for transition table)

Random

STATE	ACTION	ILLUSTRATION: STATE	ILLUSTRATION: EFFECT
Generated number is 1	Moves forward		
Generated number is 2	Rotates		

Smart

STATE	ACTION	ILLUSTRATION: STATE	ILLUSTRATION: EFFECT
Scans nothing	Scans four sides then moves forward		
Detects the end tile	Does specific actions depending on the direction		
Scans pit	Goes around it		

Scans beacon	Forwards to the beacon, to determines whether it's useful or not		
Finds a useful beacon	Goes to all 4 sides of the beacon		
Finds a useless beacon	Activate it to prevent prioritizing on going back to it and disregard beacon		
Scans golden pot	Goes into golden pot		<div data-bbox="1188 961 1424 1066"> <p>Miner has reached the Gold Pot!</p> <p>Number of Scans: 0 Number of Rotates: 4 Number of Fronts: 11</p> <p><input type="button" value="Exit"/> <input type="button" value="Continue"/></p> </div>

5. Specify how the goal state can be determined and detected by the agent
 - The goal state is when the miner reaches the GoldPot tile and wins the game. But if it is to be based on the code, the goal state is when the *didReachGoldPot()* method which checks if the Miner is at the same tile with the Gold Pot will return *true*.