

CIS6020 Assignment 1

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I. Basic Strategy

The designed heuristic strategy is going to evaluate the Manhattan distance between the food and the current position of the Pacman and try to visit the farthest one firstly. Once the Pacman reaches the 'furthest food', it will start a new round of maximum distance evaluation between the remaining food and its current position.

The Pacman will reach the goal state by finishing visiting all four corners of the maze.

II. Why it is consistent

Because the agent with the given start position, its Manhattan distances to each food position are always consistent.

Let's take an example. In the following diagram, suppose the Pacman starts at (3,3); Food A at (0,5); Food B at (2,2), and Food C at (5,4)

Food A					
				Food C	
		<Pacman>			
	Food B				

The furthest food within the Manhattan distance for the Pacman will always be Food A.

Therefore, for each game rounds, Pacman will always try to visit Food A first, and subsequently, visit the rest by evaluating the furthest Manhattan distance.

In another word, Pacman's moving policy will be deterministic, rather than stochastic.