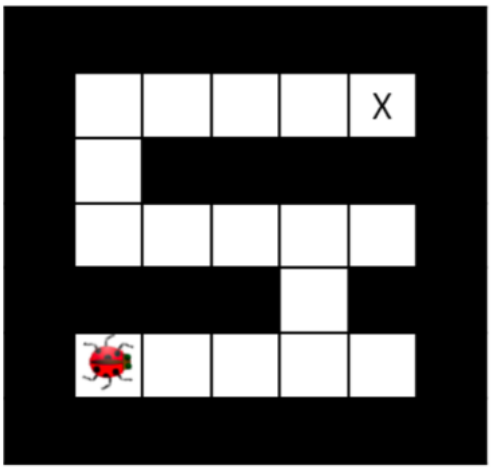
AU332 Quiz3

* 基本信息：

姓名：

学号：

*1. You control one insects in a rectangular maze-like environment with dimensions M × N. At each time step, an insect can either (a) move into an adjacent square if that square is currently free, or (b) stay in its current location. Squares may be blocked by walls, but the map is known. Optimality is always in t erms of time steps; all actions have cost of 1 regardless the actual move it has made. You control a si ngle insect as shown in the maze below, which must reach a designated target location X(hive).



Which of the following is a minimal correct state space representation?

An integer d encoding the Manhattan distance to the hive.

● A tuple (x, y) encoding the x and y coordinates of the insect.

A tuple (x,y,d) encoding the insect's x and y coordinates as well as the Manhattan distance to the hive.

This cannot be represented as a search problem.

*2. What is the size of the state space?

● MN

(MN)^2

2^(MN)

M^N

max(M,N)

*3. Which of the following heuristics are admissible (if any)? 【多选题】

☑ Manhattan distance from the insect's location to the hive.

☑ Euclidean distance from the insect's location to the hive.

Number of steps taken by the insect.

提交