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**SUBJECT:** Artifical Intelligence (LAB)

**Task No -7**

**Question 1:**

**Why this code was made:**

The purpose of this code was to determine the shortest path between two points in a grid or maze. It help in resolving navigation issues in which a robot or agent must navigate between obstacles and a starting point. These algorithms are frequently used to determine effective movement routes in AI, robotics, games, and GPS navigation systems.

**How this code works:**

The code looks for the shortest path using the A\* (A-star) algorithm. Beginning at the starting point, it continually investigates potential movements while computing two values: the estimated distance to the objective (h) and the cost to reach a point (g).  
The cell with the lowest total cost (f = g + h) is always chosen by the algorithm to continue. It reconstructs and shows the entire path from beginning to end when it comes to the objective.

