

On-site Programming Test

Your task is to modify your existing path planner to find a path that will meet some fuel constraints. The cost of moving to a vertically or horizontally adjacent cell is 1. If your path planner allows diagonals, the cost to move to an adjacent diagonal cell is $\sqrt{2}$.

The data in the cost map that you read in has been modified. The first line will be a number representing how far your robot can go before running out of fuel (this is the amount of fuel your robot starts with, and the maximum fuel capacity). Additionally, there is a new symbol in the cost map, which represents a refueling station (the plus sign).

Entering a refueling cell will give your robot full fuel.

There will never be more than 7 gas stations in a map.

Example:

Given the map below, If the robot had a fuel capacity of 3 or more it could move to the refueling station from its start position. If the fuel capacity was 2 or less, it could not:

.R..+

character '+' (a plus symbol) represents a refueling station. The cost to move to or from a refueling station is the same as moving to or from any other cell.

character '#' (a hashtag symbol) represents an obstacle

character '.' (a period) represents open space

character 'R' (a capital R) represents the location of a robot

character 'G' (a capital G) represents a goal location

Example Test Cases:

<https://pastebin.com/Yp8AM4Mw>

<https://pastebin.com/qqZPCTL1>

<https://pastebin.com/2gGK6n4c>