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# Amazon Bright Network Code

# Challenge Solution Documentation

Umar Yusuf

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## Instructions to Run

Below is an example program creating the scenario described in the brief:

import Grid from "./Grid";

const grid = new Grid([10,10], [0,0], [9,9])

grid.addObstacle([9,7]);

grid.addObstacle([8,7]);

grid.addObstacle([6,7]);

grid.addObstacle([6,8]);

grid.print();

To run the example quickly, run the following line in your terminal:

|  |
| --- |
| git clone https://github.**com**/umaryusuf11/amazon-**bn**-code-challenge-2022 && **cd** amazon-**bn**-code-challenge-2022 && npm install && npm start |

Find the full code here:<https://github.com/umaryusuf11/amazon-bn-code-challenge-2022>

## Task (simplified)

Imagine a logistics bot (let’s call it a bee) has a parcel to get from point a in a warehouse to point b. How would it do that?

## Solution Breakdown

Status: ✅ = Done **|** 🕚 = In Progress

-   ✅ Create a digital map of the warehouse.

-   ✅ Plot the start position on the map

-   ✅ Plot the targeted finish position on the map

-   ✅ Plot any obstacles (walls, tables, etc..) to the map

-   🕚 Calculate a route from start to finish that avoids obstacles (use *A\** or *Dijkstra's algorithm*)

-   Highlight the route on the map and pass it onto the bee

## Possible Improvements

* Complete the pathfinding algorithm
* Grid internal data structure could be a graph, not a Node[ ]

## **Class Diagram**

Diagram

Description automatically generated with medium confidence