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CMSC 21

Lectures 6-7 Assignment

GitHub Link: https://github.com/Megunut/CMSC-21/tree/main/Lecture%206-7

Item 2 Solution & Insights:

I started by creating a new multidimensional array, network_matrix_values, since the original array contained character data types of letters and numbers. Given a starting point, the goal of the program was to proceed to the closest charging station: Point C or D. The program starts by checking if the given starting input is C or D in which the program ends.

Each location/point is represented as a row of 1s and 0s. The program uses a while loop. The program checks if the current location can proceed directly to Point C or D, which is determined if the column C or D at that row has the value 1. If not, the program iterates through the values of the row to find for the first instance of 1. If the first instance is the same point as the current location, then it is ignored. If a value of 1 is found, then that point will be assigned as the new location. After a new location is assigned, it runs the program again with the while loop.

My solution works as intended for the given scenario. However, the solution I used might not work if the values of the points were to change. For example, Point A and B are connected by a two-way path. Since the program checks for the first instance of 1 in the row, the car will always proceed to point A when it reaches B. This behavior does not happen in the given scenario since point B can proceed to point C. But if a point is placed between B and C, then the location would keep on switching between A and B since it has a two-way connection.