CMSC21
Lectures 6-7 Assignment
Manejo, Kzlyr Shaira

1. a. We designate the true values to specific places in the array by using brackets. The rest of the elements in the array will be considered by the program as false.

   ```
   bool pathway [8] = {[0] = true, [2] = true};
   ```

   To further shorten the code, we can also use the values 1 and 0 which also corresponds to boolean values true and false.

   ```
   bool pathway [8] = {[0] = 1, [2] = 1};
   ```

   b. We can just declare the first 3 elements of the array and the rest will automatically be considered by the program as 0 or false.

   ```
   bool pathway [8] = {true, false, true};
   ```

   We can also further shorthen the code using the values 1 and 0 which also corresponds to true and false, such as:

   ```
   bool pathway [8] = {1, O, 1};
   ```

2. Solution:

   First is defining the size of the 2D array using a macro. Then, declaring and initializing the adjacency matrix containing the boolean values 1 and 0. The size of the matrix is actually 9x9 however, we cannot store different data types in a single matrix therefore, I initialized a separate array for the points/letters- A, B, C, D, E, F, G, and H.

   In displaying the array, I used loops along with else and if statements in order to insert the alphabets in the first column and row. The outer loop corresponds to the rows of the matrix while the nested loop corresponds to columns of the matrix.

   In finding the nearest charging station, I used a while loop and if and else statements to traverse the elements in the array and check the value of each points. The first if-statement checks if the the point or location is a charging station or next to a charging station. Next, the else if-statement checks for possible paths in order to arrive at the nearest charging station given the current point. And the last else if-statement is for location H since there is no possible way to get to any charging stations in that point.