

First of all, I started by stating my global variables. Created a 2x50 matrix and declared one bool and one integer variable to initiate the while loops in the functions. I have a print function that prints out the whole matrix with its values. Another function is to convert the location in the matrix into an integer between 1 and 100. Taking the values of row and column. Continuing with the main function, I firstly initialized all the values in the matrix by 0s. Then, declared `srand(time(NULL));` in order to generate different random numbers at each execution as stated in the homework document. Later, the threads were created as well as the create functions. Moving on, I have a while loop that constantly checks if the numbers in the matrix are non-zero meaning, if the matrix is full or not. If it full, it leaves from the loop, joins the threads and prints out the matrix. In the agency functions, I used the sample while loop statements given in the homework document. Inside the loop, we generate 2 random numbers, one in between 1-2 and second, in between 1-100 for row and column values. After these values are sent to our number function, we check if the generated coordinates have 1 (indicating the first agency) or 2 (indicating the second agency) in them. This if statement checks if the spot has been taken or not. If not, the agency occupies the spot and leaves either 1 or 2 in it to indicate that it has been reserved.