Algorithm to calculate minimum number of steps required by Knight to reach the target point of the empty chess board.

Input

N : Number of rows in a square chessboard.
startingPosition : Valid starting position of knight empty on empty chessboard. ({x,y,d}. Where x,y are position and d is distance covered with initial value 0)
destinationPosition : Valid destination position for knight empty on empty chessboard. ({x,y})

Algorithm

- In square chessboard of N rows there are N*N valid spot. Lets create a utility function which will take input as spot({x,y}) and return boolean value, if spot is valid or not. Let's name that function as isValidSpot().
    - For all given {x,y} if the coordinates are inside {0, N-1} then its valid spot.
- For a knight there are max 8 positions in which knights can move on an empty chessboard. Create a function which will return all valid moves a knight can take from current spot. Lets name this function as getAllValideMoves(). We will have to use “isValidSpot” to check if the spot is valid.
    - Here are the 8 move knight can take from any position {x,y}
        - {-2,-1} {-1,-2} {+1,-2} {+2,-1} {-2,+1} {-1,+2} {+1,+2} {+2,+1}
- Lets create a visited array of size N and initialize it with false values.
    - Boolean visited[N][N] = {false}
- Create a queue and push the startingPosition in the queue.
- Repeat the below steps till the queue is not empty.
    - Post the top element from the queue and store it in a temporary spot variable. (currentKnightPosition)
    - Check if currentKnightSpot is equal to destinationPosition.
        - Check if {x,y} values for destinationPosition and destinationPosition are the same.
        - If true then return currentKnightSpot.d as final result.

        - Now get all valid moves a knight can take from current position using getAllValideMoves(). And do the following for that.
            - Do the following if visited[x][y] is false.
                - Update visited[x][y] as true.
                - Add spot {x,y} into the queue.
- Return error message that knight can't be reached to destination position.