**Defining objective of our Project as open-ended problem:**

Understanding the existing problem and experimenting the problem on below specified goals. Upon research and study, we are going to define the best traversal of Knight in each experiment which is purely based on our research and not explicitly stating this would be the best result. It’s basically an intuitive puzzle to challenge.

[1] Trying to experiment the traversal path of Knight having a goal, number of ways to reach the goal and find out the path which is minimum. [Possible 5x5 to 8x8]

[2] Trying to explore when a Knight starts in the middle position of the 4x4 section it will have 8 possible next moves. We will check if the Knight can traverse the whole 64 cells starting in each of those 4x4 section cells. [Only 8x8]

[3] We know that when a Knight starts at corner cells on an 8x8 chess board, it can traverse the whole 64 cells. We will check if that is possible for 5x5 to 7x7 size chess boards.

[4] We know that when a Knight starts at corner cells it can traverse the whole 64 cells. We will compare the time complexity when a Knight starts from corner with when a Knight starts from 4x4 mid-section cells. [only 8x8]

**Constraints:** Each square is visited exactly once.

**Dataset:**

1. Different size of chessboard starting from 5x5 to 8x8

**Algorithm Goals:**

1. Our algorithm will take board size, start position of the Knight, and the end position of the Knight as inputs and return the minimum traversal path required between start and end positions.
2. Our algorithm will take the starting position as input, assuming our chessboard size is 8x8, and returns the full traversal path if it can traverse the whole chessboard.
3. Our algorithm will take board size as the input, assuming knight starts at one of the corners, and returns full traversal path which can cover the whole chess board.
4. Our algorithm will compare the time complexities between different knight start positions from point 2 and point 3 for 8x8 board size.